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THE LONDON MEDICAL GAZETTE,

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WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, MARCH 27, 1840.

LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISEASES OF THE SKIN (*concluded.*)—
Warts, Corns.

DISEASES OF THE CELLULAR TISSUE.—
Furuncle Anthrax.—Tumors.—Lipoma, Encysted Hydatid, Sarcomatous, Fibro-Nervous? Their Causes, Symptoms, Nature, and Treatment.

DISEASES AND INJURIES OF ARTERIES.—
General Remarks.

CORNS.

CORNS are a circumscribed thickening of the epidermis of the toes. They are observed at the dorsal surface, at the more prominent joints, between two toes, at the external, rarely at the internal, border of the foot—generally at all points subjected to pressure. They are almost always flattened, inserted, as it were, into the skin, are gradually formed, and do not attract attention until they have acquired a certain volume, when they occasion lancinating pungent pain, as if a nail were driven into the part. Sometimes they commence by being acute, especially in persons with delicate skin. The pain is then acute, and, if cut into, a serous fluid escapes, the suffering diminishes until they acquire the ordinary characters of corns. Pathological anatomy shews us, when we cut or extirpate a corn, the skin sensibly depressed. If we macerate the toe of a dead person which has a large corn upon it, after a short time it is easily removed; the centre of it enjoys considerable tenacity, and, at the point which cor-

responds to the centre, the chorion is depressed, or even perforated. Corns are inorganic, simply formed of thickened cuticle: this thickening is produced by a vice of secretion, and this vice of secretion is produced by pressure exercised by ill-fitted shoes. This pressure prevents their outward extension, so that they compress the chorion and subjacent nerves, cause acute pain, and may, at last, thin, and perforate the chorion. A first means of cure is to wear easy shoes. The acute pain may be moderated by cutting away the exuberant part with a sharp knife. The central point or eye may be very often removed after soaking the foot in warm water. Plasters of many kinds will be found useful in treating corns, provided the patient, at the same time, reform his shoes. It is well to relieve the central nucleus from pressure: this may be done by applying upon the part a piece of doe-leather spread with adhesive plaister, with a hole cut in the centre large enough for the corn to press through, cutting, from week to week, the prominent part. They may be destroyed by caustics—nitrate of silver, caustic potash, nitric acid, &c.; but, in inexperienced hands, this class of remedies may be found hurtful.

WARTS.

Warts are not always, like corns, a simple epidermic secretion. The chorion and the rete mucosum appear simultaneously affected. When we cut vertically a large wart, the cuticle is seen progressively to increase in thickness up to the centre of the wart; the chorion is thickened like the epidermis, and sends into its thickness prolongations, which are called roots. In cutting into a great many warts, we always see in their substance blackish points. In superficial warts the corpus mucosum seems alone to be affected. Pressure is not always the cause of warts. It is said that the blood which they sur-

nish has a contagious property. I know a person who has on his hand a chain of warts, which he says are developed exactly on the line of a streak of blood shed in cutting another wart. They occur at all ages, but they are certainly most frequently seen in childhood and youth; and especially in those who handle irritating substances, or have little regard to cleanliness. Some persons appear to have a kind of predisposition to them, and they return after they have been destroyed, in spite of every regard to cleanliness. Warts often disappear spontaneously—are easily removed or destroyed; but in either case are apt to be re-produced. They may be tied with a silk thread or horse-hair; if their base be broad, they may be removed with a knife or curved scissors, or may be destroyed by caustic. When they are excised, they ought first to be bathed for half an hour in warm soapy water; they must then be removed by thin layers until they begin to bleed, when the surface should be rubbed over with lunar caustic. When nitric acid is employed, the surrounding parts must be protected by adhesive plaister. A strong solution of the muriate of ammonia applied upon them twice a day will usually get rid of them. Certain acrid vegetable juices will also effect the object. The credulous believe that they can be “charmed” away. The charmers may be divided into classes: one uses mystical words, and cure without touching them; those are inoffensive: another employ the juice of certain acrid herbs; this class may do mischief. The pretended cures depend, not upon the means used, but upon the time they are used. Warts tend to cure spontaneously towards the age of puberty.

DISEASES OF THE CELLULAR TISSUE.

Furunculous inflammation, though it unquestionably affects the skin to a certain extent, yet may more properly be classed with the diseases of the cellular tissue.

The cells of the chorion are penetrated at all points by small conical prolongations, derived from the subcutaneous cellular membrane: inflammation of these prolongations gives rise to *furunculus* or *boil*; the simultaneous and confluent inflammation of several of these appendices constitutes *anthrax*. When these cones are so affected, the cutis resists their development, and a species of strangulation and mortification takes place. Left to themselves, these affections always terminate in the mortification and expulsion of one or more of these small cones. *Furuncular inflammation* is commonly connected with a disordered condition of the stomach and bowels, and is scarcely ever the effect of mere inflammations of the skin.

A *boil* is, therefore, an inflammatory swelling of the cellular substance and the skin—is circumscribed, conical, and prominent; hard, very red, hot, and painful, and terminates in the formation of a very small quantity of matter, and the expulsion of a mass of mortified cellular tissue. The buttocks, the thighs, the back, the axilla, the neck, and the parietes of the abdomen, are the regions of the body for which they seem to manifest a preference. Usually a boil is not seen alone; it has others near it. Strictly speaking the inflammation of a single cone constitutes a boil; but at certain seasons, and in many cases as a consequence of bad or insufficient food, a larger tumor is developed, but without the constitutional symptoms of anthrax. Last year I had, at the same time, two patients; one, a woman of 22, living in London; the other, an Irish woman, a hay-maker, aged 40, with this species of tumor in the supra clavicular fossa. These tumors have been named by some pathologists *furunculus anthracoides*.

A boil begins by a small hard conical tumor, of a bright or violet red colour, which, in a few days, principally by irritating the surrounding tissue, may acquire the size of a large nut, or walnut. The pain is sometimes very acute; compared, by some, to the pain which would be produced by a drill or gimblet. From the fourth to the eighth day it rises to a point; the apex becomes white, softens, and finally gives way, when a small quantity of sanguinolent pus escapes by an opening as small as if it had been made with a fine probe, and the subjacent slough is exposed; when this is expelled the tumor seems to be pierced by an open-mouthed cylindrical cavity. The pain now ceases, the skin collapses, the cavity fills up, and, by the end of a fortnight, no other trace is left than a small depressed cicatrix of a dusky red colour.

Furunculi are never dangerous of themselves; but their situation sometimes renders them very troublesome. I recollect a case in which one was developed in the perineum between the anus and scrotum, which rendered the excretion of urine very difficult, and simulated a urinary abscess.

Treatment.—It is stated, in books, that we may prevent the development of a boil by applying a leech directly upon the little tumor, or by applying caustic potash, or lunar caustic, upon it: I have never succeeded with either of these means. Warm fomentations will usually afford relief; if, however, the pain be severe, the simple division of the integument affords the most efficacious relief. As a topical application a simple poultice is probably the best. But in these cases, the cause being usually internal, and continuing to act, successive

crops appear, and emetic or purgative medicines are exhibited to arrest them. Fosbroke advised that diluted sulphuric acid should be largely administered as a very effectual means of lessening pain and preventing successive eruption: I have never derived much advantage from this treatment: but I constantly experience the most signal good effects from the exhibition of the liquor potassæ in infusion of gentian—half dram doses three times a day.

ANTHRAX OR CARBUNCLE.

Between furunculus and anthrax, the only anatomical distinction which can be drawn is, that the former affection is confined to one, two, or three cellular cones; the latter to many. Anthrax is usually seen alone: furunculi are often numerous. Furunculus is seen at all ages. Anthrax is rarely seen in children—is much more frequent in the adult, and in those broken down by age, misery, infirmities, or by good living.

The term anthrax has been applied to two very different diseases; the one, possessing many characters in common with furunculus, differing from it only in volume; the other, *malignant* in its nature, belongs to that class of gangrenous diseases produced by miasma, or septic virus.

Furunculous Anthrax, which alone we shall consider here, is an inflammatory tumor, circumscribed, very hard, very painful, of a dark red colour, and accompanied by burning heat. This tumor is constantly terminated by the mortification of the cellular tissue which it affects, and by the destruction of a portion of the skin by which it is covered. Women and children are much more rarely the subjects of this disease than adults and old men.

It is commonly developed in those situations where there is an abundance of cellular tissue—the nape of the neck, between the shoulders, the lumbar region, the parietes of the thorax, the abdomen, and the thighs. It is occasionally seen in the inferior maxillary region, and in the supra-clavicular spaces.

Causes.—We are not at present cognizant of the causes of this disease: in some cases it would seem to be a consequence of bad or indigestible food; in others, of the application of acrid or irritating substances to the skin, of punctures, or habitual filth; but then it also attacks persons who are the most attentive to cleanliness. It is certainly more frequently seen in spring and autumn than in summer and winter: this would seem to prove that damp, cold, and vicissitudes of temperature, are favourable for its production. It not unfrequently succeeds to measles and small-pox in adults. It is very generally believed

that anthrax is connected with certain deranged functions of the stomach, the liver, and the uterus; and this appears reasonable when we consider how often anthrax seems to be caused by improper food, how often it is presented in the character of a critical affection in persons suffering from bilious or nauseous fevers, and how commonly it is observed in women at the period when the menstrual function ceases, as compared with any other epoch of life.

Symptoms.—The occurrence of anthrax is often preceded by boils; indeed, during its development, we often see the point surrounded by boils. Sometimes it appears without any material constitutional disturbance: at other times it is preceded by anorexia, lassitude, rigors, and other symptoms which denote digestive derangement. At first there is little projection beyond the surface; and commonly its extent is not great. Sometimes during the first few days a flat vesicle is seen, filled with a reddish sanious fluid, as in malignant pustule. Usually its progress is rapid; and in eight or ten days it may attain a surface equal in extent to the palm of the hand: indeed, on the back, the thorax, and the abdomen, they have sometimes been seen nine or ten inches in diameter. As the tumor enlarges, it projects so as occasionally to pass the level of the skin by several inches. Anthrax continues very hard up to the moment when mortification seizes upon that part of the cellular tissue which occupies the most projecting part; and even when that portion is softened the surrounding part continues hard, and the base enlarges. The skin covering the tumor is of a violet red colour, which does not disappear upon pressure; and around its base the redness is erysipelatous: this indicates the ulterior progress of the disease. The heat is acrid and burning, especially at the summit of the tumor; and it does not diminish until an opening is made. The pain is very acute, but varies at different points of the tumor; sometimes it is heavy, dull, tensile; at others, lancinating, and the patients complain of the lancinations extending to a considerable distance; sometimes it is a gnawing sensation, as if it were torn with teeth. Whenever the tumor is large, or affects irritable subjects, there is fever, restlessness, sleeplessness, the skin is hot, the urine dark and in small quantity, and the head painful.

Other symptoms may exist connected with the situation or size of the tumor. Thus when it occupies the lateral or anterior part of the neck, respiration and deglutition may be impeded, a sensation of heat is complained of in the larynx and trachea, and there may be a troublesome

cough; the face is puffy, and the head painful, from the jugular vein being interfered with. If the tumor be seated on the thoracic parietes, respiration is embarrassed, and the inflammation may be extended to the pleura. If it be seated in the abdominal parietes, still it affects respiration, and the pain is much increased by efforts in going to stool; or, indeed, there may be vomiting, and even peritonitis. Left to itself, it softens at the summit, the skin is dark violet or bluish, and if the finger be applied upon the point we become sensible of an obscure fluctuation. After some days the skin ulcerates from within outwards, and a small quantity of sanguinolent pus, together with some shreds of sloughy cellular tissue, escapes; the opening enlarges, and a small quantity of thick pus continues to flow out. Even after this you will often observe that the anthrax continues to increase in extent and depth; and then the relief which the patient experiences from the opening is small. The softening goes on, and many irregular openings are formed; they enlarge and unite. Destruction is not limited to the skin and cellular tissue; small arteries and veins are ulcerated, and blood in small quantity often escapes; but I know no case where any considerable hæmorrhage has occurred. When the skin is largely perforated, we see distinctly the sloughing cellular tissue. It exhales a fetid smell, not, however, like that yielded by substances in a state of putrefaction; nor does it assume that dark colour which is seen in other kinds of gangrene. By little and little the cellular sloughs are thrown off, suppuration becomes more abundant, and the pus is thinner; pain, heat, fever, and tension diminish. When the sloughs are thrown off, the naked aponeurosis is often seen; it is perforated, and the pus is seen to escape by the openings which it presents. The skin corresponding to the circumference of the tumor is raised, thin, bluish, and so disorganized as to be incapable of again uniting to the subjacent tissue. The disorganized tissues are gradually thrown off, and the fundus of the ulcer is covered with granulations; the edges are softened, and the work of cicatrization proceeds. The cicatrix is always irregular and puckered, and for a long time retains a brownish red colour. If the anthrax have been very large, the cicatrix may tend to constrain certain movements; but this may usually be prevented by moderate care.

Anthrax, such as I have described, benign in its character, is sometimes a fatal disease; it may destroy life when very large—when seated in the walls of a splanchnic cavity, the inflammation being communicated to the serous surface. In

aged persons, or in those broken down by other diseases, it may also be fatal. Ordinarily, however, when not very large, and occurring in persons of good constitution, the disease is not dangerous.

Dupuytren was accustomed to divide the progress of anthrax into four periods—that of *invasion*, of *suppuration*, of “*deterision*,” and of *cicatrization*. The first, characterised by loss of appetite, thirst, whitish or yellowish coating on the tongue, with or without redness of the edges; sometimes epigastric tenderness, heat of skin, acceleration of pulse, and other signs of gastric irritation. In some cases the tumor appears without these precursory symptoms. It is circumscribed, tense, red, livid, or glistening, accompanied by burning heat. The inflammation proceeds for eight or ten days, and, when it has acquired a certain degree of intensity, reacts on internal organs, whence results exasperation of the gastric symptoms, or their manifestation, if they are not already developed. The *second period* extends from the tenth to about the twentieth day. In this the suppurative action is established, and the cellular and fibrous tissues are inflamed and gangrenous. The integument is perforated from within outwards by many very small openings, each corresponding to the apex of a cellular cone; through these small openings a purulent fluid escapes. Soon these openings enlarge by coalescing, and ultimately they are confounded in one—in a single opening. We then see the slough, resulting from the mortification of the cellular tissue, impregnated with pus, and yielding a fetid odour. Towards the end of this period, the pain, the general heat, the quickened pulse, and the thirst diminish. The *third period* extends from the third to the fourth week; the suppuration becomes more and more abundant, the slough is detached, and a large wound is presented. The skin forming the edges of the ulcer is livid, bluish, and sometimes so thinned as not to be susceptible of adhering to the subjacent parts. The *fourth period* has no fixed duration; it depends on the extent of the loss of substance of the skin. When the edges are much thinned, cicatrization is long in taking place.

Treatment.—When anthrax is produced by external causes, is not preceded by derangement of functions, and is not large, no inconvenience will be felt by attempting its resolution by means of a good number of leeches applied to its surface, or even by the application of cupping glasses. Sometimes relief may be obtained by the application of cold; and the progress of the disease may be arrested. If, however, the disease proceed from constitutional causes, it may not be wise to employ the

latter means, as it may suddenly induce gangrene. Emollient cataplasms are often very fatiguing to the patient, and are, in my opinion, useless, except as relaxing agents: warm water would, therefore, do better. Plasters, ointments, and greasy applications, increase the burning heat. If we bear in mind that anthrax is essentially an inflammatory disease, that it only terminates in gangrene because the cellular tissue is strangulated, we shall have distinct ideas of the practice which should be followed: it was in consonance with this principle that Lallemand made a circular incision which relieved the strangulation and emptied the capillaries; but this circular incision will not do when the tumor is large, or situated in the vicinity of large vessels and nerves. The crucial incision is much more advantageous; but to attain the end, the incision must be deep, and extend beyond the circumference of the tumor. When the tumor is very large, it may be necessary to make more incisions. Soon the suppuration becomes considerable, and the poultice should be removed three times a day. We must not extract with violence the sloughs, or we may produce much pain and some hæmorrhage; but, when hanging about, we may cut them off with a scissors. If suppuration be slow, it may be necessary to stimulate with resinous or balsamic substances. If the digestive system be much deranged, we may at first give an emetic and laxatives; during the period of acute inflammation, the patient should be carefully dieted. If pain be violent, and no congestion or constipation, we may give opium. When suppuration is established, and fever has ceased, we must sustain the patient by diet and tonics.

TUMORS.

Lipoma.—Among the tumors developed in the cellular tissue are some formed almost exclusively of adipose matter—*lipoma*. These tumors are slowly developed, and usually without attracting attention; they present to the touch a peculiar softness, which may be compared to that of eared cotton; their surface is irregular, presents knobs which are not hard, and which are easily depressed. When they attain a certain degree of development, their increase is often rapid, and their bulk may become enormous. So long as the tumor is small, the skin over it suffers no change; but when it is large the skin acquires a tension proportioned to its volume, the circulation is interfered with, the cutaneous veins are distended, the skin inflames, especially when it is seated on a point where it is exposed to friction or external violence. But lipoma may be seated also in the adipose tissue; in this latter case they are

sometimes formed of irregular masses of fatty matter in certain regions, and present no well-defined limits. In this case the borders of the tumor are insensibly confounded with surrounding parts (*lipoma diffusum*); it is remarkably soft, is easily compressed, and is so adherent to the skin, that this latter presents scarcely any mobility, and does not present a complete cyst. The adipose matter which it contains is similar in all respects to that of the rest of the body, except that it is a little firmer. That kind which exists between the layers of the cellular tissue is more deep seated, is generally covered with a layer of adipose matter, is perfectly circumscribed, very moveable, and elastic; and it is surrounded by a particular cyst. Usually the parietes of the cyst are thin; in rare cases they are fibrous, or even cartilaginous.

In general we do not know the causes of lipoma; they now and then succeed to pressure, to a blow, or other violence; they are met with at all ages, in both sexes, most frequent, however, in adult life and in the female; and their most common seat is the neck, the shoulders, or the back. It is not uncommon to see many of these tumors upon the same persons.

Treatment.—These tumors constitute a disease of importance, inasmuch as in some cases they are developed very rapidly. When small, they sometimes seem to yield to counter-irritation; yet, as a rule, ablation is the only treatment which promises a speedy cure. The operation is simple and easy when the base of the tumor is not very wide, but it may offer difficulties, and sometimes danger, when the tumor is very large, when it is in the vicinity of important organs, and when its prolongations extend far and wide. In such cases it is sometimes impossible to remove the whole of the morbid growth, and then the disease is reproduced. The extirpation of these tumors should be done in conformity to certain rules; it should be done with a bistoury; the incision should extend beyond the margin of the tumor, and the tumor should be dissected out with the cyst; the lips of the wound should then be fairly brought together, and union by first intention proceed. If the tumor be very large we shall sometimes fail in this; but we oftener fail from leaving some portion of the cyst behind.

ENCYSTED TUMORS.

Under this denomination we include *tumores cystici*, *saccati tunicati*, *cystides*, *lupia*, &c., which are developed in the subcutaneous or interstitial cellular tissue. They are characterised by a proper cyst, in the cavity of which a particular secretion is made. Bichat demonstrated almost to evi-

dence, that this cyst, instead of being formed, as was previously supposed, by the thickening and distention of an arcola of cellular tissue, was constituted by a true new product, which, in its nature and vital properties, should be assimilated with serous membrane. The consistency and the nature of the matter accumulated within these cysts have caused their division into three varieties: serous (cystis serosa, hygroma); *melictric*, in which the matter contained presents the consistency of honey; *atheromatous*, in which the matter resembles pap or panada.

The nature of the cyst is very various: often they are hard, compact, fibrous; sometimes horny, or even osseous. The internal surface is frequently smooth, shining, sometimes villous; it may even present hairs at its surface. In some the organization resembles that of a mucous surface; sometimes it is reticular. The adhesion of the cyst to surrounding tissues is not usually very intimate. At first they are always very small, and slowly developed; usually round, and their limits well marked; but their form may be influenced by surrounding organs. The sensation derived from pressure varies with their contents: sometimes tense, elastic; sometimes fluctuating; sometimes solid and resisting, the skin covering them being unchanged. Often, after acquiring a certain bulk, they remain nearly stationary through life. Sometimes, without apparent cause, or in consequence of external violence, they may inflame, and the nature of the contents may then change, may become puriform; the skin reddens, ulcerates, the cyst is opened, and the contents are poured out. When this inflammation is violent, the tissue forming the cyst may undergo great changes—may become granular, and be cured; but, instead of this, it may remain fistulous—may end in the development of fungous, or fibrinous, or albuminous matter within the cyst, and resist every kind of treatment.

Another kind of tumor is particularly manifested under the scalp, under the integuments of the face, and the back. They appear to result from the obstruction of one or several sebaceous follicles, whose cavity becomes greatly enlarged. Their form is generally round, and sometimes they give a sensation of fluctuation. They contain a substance which is not very unlike cooked white of egg. They are usually adherent to the skin, and are sometimes filled with hair. The structure of these cysts is variable: in the face they are usually thin; thicker on the back; but most resistant on the head; and, usually, the cyst is as much thicker as the tumor has existed longer.

Treatment.—Many means have been employed to cure encysted tumors; the choice should depend upon the seat and volume of the tumor, its mobility, structure of the cyst, and the sensibility of the patient. Those various means are directed to resolve the tumor—to remove it completely or partially with the bistoury—to destroy it by the ligature—to incise, and destroy the cyst by suppuration. In some cases, more than one of these means are combined.

To obtain the resolution of these tumors, frictions, with irritating fluids, blisters, caustics, and other similar means, have been used. In serous tumors, these means will often succeed in causing the absorption of the fluid; but the lining membrane remains, and in most cases the fluid is again secreted. To dissipate this tendency the means must be continued long, blisters must be again and again applied. Sir B. Brodie, in such cases, is accustomed to use, with decided success, a stimulant and evaporating lotion, composed of *sp. camphorat. sp. tenuior aa. ℥iii.; ss. liquor plumbi diacet. ℥i.* This is kept constantly applied for weeks, and even months. In some cases no sensible effects are observed, other than a redness of the skin, for weeks; but still it must be persevered with.

Extirpation with a bistoury is in many cases the best mode of treatment, when the position of the tumor admits of its removal without much risk of injury to important organs. We must take care to so manage the tumor as to allow of the lips of the incision being brought properly together. Whenever the skin covering is diseased—when the tumor is very large—two elliptical incisions should be made, so as to leave only the necessary quantity to admit of immediate union.

The *ligature* has been recommended, where many and large vessels communicate with it, and when the danger of hæmorrhage may give fair cause for apprehension, or when a cutting instrument may endanger important organs. The constriction is augmented from day to day until the strangulation is complete. I have never seen this mode of treatment employed. It is always long, causes acute pain, and, when the tumor begins to slough, the odour is sometimes intolerable.

The cyst *may be opened*, or it may be destroyed in various ways. When the adhesion of the cyst to neighbouring parts is not intimate, a longitudinal or crucial incision may be sufficient to empty it, when it may be stuffed with lint until suppuration comes on. We may open the tumor with a lancet or caustic; and, for many days in succession, irritate its internal surface, by introducing foreign bodies, or touching the surface with caustic. By little and little

the cyst is detached, and brought away by supuration.

Some persons pass through its greatest diameter a *seton*, which is daily dressed with some irritating ointment until supuration has destroyed the cyst. Others have punctured it with a trochar; squeezed out the contents through the canula; thrown in an irritating fluid, which was retained until the tumor became tense and painful. Emollient applications are then made, and, when fluctuation is perceived, the tumor is opened, and the pus and cyst come away.

Of these several means I prefer opening by incision, and stuffing the cyst with lint; or to open with a lancet, and apply irritating substances to the interior, when the tumor is on the face or neck, because the cicatrix is smaller than after extirpation. Occasionally, after discharging the contents of these tumors, we can seize the cyst with a forceps, and extract it. When the tumor sends prolongations between important organs, which may be endangered by extirpation, a mixed method will sometimes be found useful.

First, The cyst may be exposed completely; and, as near its base as possible, it should be opened: a ligature should be placed as deep as practicable, and all comprised in the ligature should be excised. *Second*, Cut away as much of the cyst as can be removed without danger, and endeavour to destroy what remains by means of cauterization. *Third*, Open the cyst, fill it with lint, and remove it by supuration. *Fourth*, When the base of the tumor cannot be attacked without danger, isolate the cyst, draw it outwards, and carry a ligature around it by means of convenient instruments. These mixed operations are especially required when such tumors are developed in the cervical region.

When encysted tumors are the result of the obstruction of sebaceous follicles, they may, on their first appearance, be cured by the introduction of a small stilet into the obliterated opening, and evacuating the sebaceous matter by means of pressure. If, to empty the tumor, much pressure be required, an incision should be made over it. But my experience does not favour the belief that repeated pressure prevents reproduction. When they are situated on the head, they are not extirpated without a little risk from erysipelas. It is not necessary to completely isolate the cyst: a longitudinal line must be made over it; it must be emptied; it must be seized at its centre with forceps, and drawn out; and it will frequently peel off with great ease.

HYDATID TUMORS.

In the infancy of art, the term was only applied to particular tumors of the supe-

rior eye lid; but, afterwards, it was extended to all serous sacs with transparent parietes: we apply it to sacs containing within them small vesicular bodies termed hydatids. Wherever cellular tissue can be developed, vesicles, variable in number, form, and colour, may be met with. These vesicles are described as (*hydatids, acephalocysts, tania hydatigena*) living beings, because of the property of nourishing themselves, moving, and reproducing. Wherever developed, the acephalocysts are contained in a cyst. This cyst, more or less dense, firm, and resistant, is sometimes fibro-cartilaginous, and may even have osseous plates developed in it. The internal surface is sometimes smooth and polished, sometimes rugous, secretes a fluid which is sometimes limpid, sometimes turbid, in which the acephalocysts float. Sometimes this cyst contains only one—it may contain seven or eight hundred of these vesicular beings. The symptoms by which the existence of hydatids is revealed are far from decisive; we can never have any certainty about it. There is one variety which is almost always developed at the wrist, under the annular ligament of the carpus, occasionally under that of the tarsus, about the olecranon, or the acromion, the tuberosity of the ischium, the great trochanter, but always around the synovial apparatus of tendons. In the wrist it is not rare to see this affection supervene in persons who, by their occupation, have the palm of the hand exposed to pressure or friction. The cyst is almost divided into two portions, the one above the other below the annular ligament; it contains a fluid in which hydatiform corpuscles float. If we press upon one or the other half of the cyst, a crepitation is felt. In the interior of these cysts small lenticular, cartilaginous-like bodies are found, the largest not exceeding the pip of an apple, the smallest not larger than a millet seed. These cysts are usually not painful; the skin over them does not change colour, unless they are accidentally inflamed.

External means, such as douches, baths, frictions, blisters, and other similar means, have no effect on them. Extirpation is impossible, from their situation. Opening the cyst, and exciting supuration, is the only efficacious means; but it is not without danger, for intense inflammation is sometimes developed around the part. A puncture has been made, a sound or director introduced and passed into the other moiety, where a counter-opening has been made; but, as a seton has been found useless, and even dangerous, I should be indisposed to advise the employment of this method. In fact, all operations in this case are of such doubtful good, that when we consider how little pain they usually

occasion, I should not advise the disease to be meddled with, unless the tumor is so large as to prove a serious inconvenience.

SARCOMATOUS TUMORS.

Sarcoma, *tumor sarcomatosus*, consists in an indolent tumor, with a regular surface, slightly hard, offering at its interior a fleshy homogeneous substance, and susceptible of being developed at any part of the body. In form they are variable; sometimes they are pediculated, ordinarily developed rapidly, and capable of acquiring considerable bulk. They possess a feeble degree of sensibility, and support considerable pressure without pain. So long as the tumor is small the skin which covers it is natural; when it becomes very large, the superficial veins enlarge, the skin is tense, red, and may ulcerate. These ulcerations may partially or totally destroy the tumor. As these structures increase, they may undergo organic changes. We believe these tumors to be caused by inflammation, or at least an irritation which is often manifested under the influence of some external cause.

At its commencement we may sometimes arrest the progress of the tumor, or even cause it to retrograde, by diminishing vascular action at the part. Leeches frequently applied, cold, counter-irritation, compression, may sometimes bring about that result: but, when the tumor is large, extirpation, the ligature of the vessels by which it is supplied, or a seton, may diminish it. The seton brings about resolution by an obliteration of the nutrient vessels, or by the inflammation which it excites, or the suppuration which it sets up.

FIBRO-NERVOUS TUMORS.

Encysted "scirrroid," or fibrous tumors, are frequently developed in the subcutaneous cellular tissue. These tumors were formerly very generally believed to be affections of the nervous cords, and had been more or less completely described by several authors; M. A. Petit, in his discourse on pain, Cheselden, Camper, Chaussier, and Descot, have since described them.

They are most commonly found in the subcutaneous and subaponeurotic cellular tissue. They may be of the size of a grain of wheat, of coffee, or a horse-bean; they are smooth, opaque, and hard; their tissue is homogeneous, and of a dull white colour, without vestige of cavity or septum, of a fibrous, fibro-cartilaginous, or cartilaginous consistency. These tumors are never the seat of any inflammation, or even of redness; the cellular tissue which surrounds them is healthy. We do not find either at their surface or in their substance a filament of a nerve,

The following case, mentioned by Dupuytren, is strongly confirmatory of this:—A woman, for many years, experienced very distressing pain in the cheek. By some persons it was supposed to be rheumatism, by others neuralgic; leeches, blisters, opium, and general bleeding, afforded very little relief. One of her medical attendants, convinced that the pain was dependent upon some affection of the sub-orbital nerve, made a section of that nerve directly after it merged from its foramen. The pain, instead of diminishing, increased, becoming almost insupportable. The patient saw Dupuytren. Passing his fingers over the seat of pain, he felt a small hard tumor, moveable under the skin, which preserved its natural colour. Pressure at that point occasioned intense pain. The small body was extirpated, and the same moment the patient was completely relieved. If this little tumor had been formed at the expense of a nervous cord, the section of that cord would probably have produced a cessation of pain. A year ago I removed such a tumor, but much larger, from the bend of the arm: the slightest pressure upon it caused intense pain, radiating in all directions; but, although I examined it with great care, I could not trace a single nervous filament communicating with it.

Dupuytren states, that although very chronic at a certain period of their existence, they tend to soften, and that then they are apt to implicate the neighbouring glands, and to be reproduced after extirpation. Women are much more subject than men to this affection. They are developed most frequently in the limbs, and especially the legs. The patient commonly experiences pain at the part long before any tumor can be felt. As they increase in size the pain becomes greater, and the slightest friction, even that of the clothes at the part, will occasion very distressing suffering. They can then be easily felt, and may indeed very slightly project. Most frequently the pain occurs in paroxysms lancinating as in cancer; if pressed upon, the pain is like an electric shock. Very often the pain occasioned by these tumors has been mistaken for neuralgia, and patients have been tortured with leeches, blisters, and still more energetic means.

Treatment.—Extirpation is the only effectual means of relieving the patient. A longitudinal incision over the tumor is all that will be necessary; the tumor is seized with a hook, drawn forward, and, with a single stroke of the bistoury, separated from the subjacent parts; the lips of the incision are brought together, and maintained by strapping. Descot recommended the application of narcotics, where the patient would not submit to the use of a cutting

instrument. He mentioned the case of a woman of sixty, who had one of these tumors on the inside of the knee. She would not consent to operation. Narcotics were applied for many months, and ultimately quieted the pains, which did not return.

DISEASES AND INJURIES OF ARTERIES.

Before we treat of the diseases and injuries, it is proper to make a few observations upon the structure of arteries. The tissue of arteries is of a yellowish or greyish colour, becoming redder as they become smaller. The consistency of this tissue varies in different arteries. The larger arteries have the thicker coats; but, relatively to their diameter, the parietes increase in thickness in proportion as they are farther removed from the heart. The parietes are stronger in the inferior than the superior extremities, and, generally speaking, the more depending the part the stronger the parietes. Three tunics compose the walls of an artery; an *external*, fibro-cellular, insensibly merging in the adjoining cellular tissue—some persons do not hold this to be a proper tissue; an *internal*, which is continuous with the lining membrane of the heart; and a *middle* one of a peculiar character.

The external tunic, the *cellulosa propria* of Haller, should be distinguished from the surrounding cellular tissue with which Monro, Mascagni, Walther, and others, have confounded it. It is moderately thick; it presents two layers, the one purely cellular, the other yellowish and coriaceous. Its fibres are oblique and interlaced, which gives them considerable power of resistance, and upon it the *vasa vasorum* ramify. This tunic is allied to the fibrous and cellular system; its internal layer gradually merges in that of the middle tunic, and its external in the surrounding cellular tissue. The *middle tunic*—regarded by some as muscular, by others as ligamentous or aponeurotic, which was constituted by Bichat as a tissue apart from all others—appears to be similar to that of other fibrous elastic organs of the economy. It is formed of transverse whitish or yellowish fibres, which represent circles solidly united together, (Beclard). Others maintain, that there are also longitudinal and oblique fibres. Hunter and Mascagni thought the fibres were not exactly transverse; Manec conceived that they were dove-tailed. In the large arteries they may be separated into many layers; they are very apparent in middle sized arteries; in the small arteries they become of a fine reddish grey, like those of the intestines and bladder. All the arteries possess these fibres: it is an error to deny their existence in the brain. This tunic is adherent externally with the fibro-cellular

coat; internally, with the inner tunic. The *internal tunic* is thin, semi-transparent, slightly whitish, dense, homogeneous, without pores or sensible intervals. It may be artificially divided into two layers, especially in large arteries. Haller and Mascagni regarded these two layers as two distinct membranes, and have termed the external *membrana nervosa*. On the internal surface of this tunic longitudinal folds may be observed; and at the level of joints transverse plicæ, which are effaced when the limb is extended. The internal surface is smooth, lubricated by a serous fluid in small quantity. The adhesion of this tunic to the middle one is very intimate.

So constituted, arteries enjoy elasticity in great perfection, which is confounded occasionally with extensibility and retractility. Their resistance is considerable, and as much greater relatively to their calibre as they are smaller. Besides these properties, they possess a vital power of contraction. This is shown by the following experiment:—If, in the living body, we comprise between two ligatures a portion of artery, and puncture it, the blood contained in that part will be forcibly expelled; in a short time after death, this does not take place. Secondly, when death happens from hæmorrhage, the arteries emptied and contracted in virtue of this vital power, resume their ordinary dimensions when life has ceased. This contraction is much more marked in small than in large arteries. The three tunics which compose the arterial tissue have different properties. Elasticity especially resides in the middle tunic, whose longitudinal is greater than its transverse resistance; this tunic is also less elastic in small than in large arteries. Contractility seems also to be seated in this tunic. The external is the most extensible; it frequently remains intact when the other membranes are ruptured, as we see in the application of the ligature. The internal tunic is little resistant, and seems to have no other obvious use than to facilitate, by the polish of its surface, the passage of the blood. If great traction be made upon an artery, the internal tunic gives way first, then the middle; the external resisting long before it is ruptured.

In their course, the situation of the arteries is such that the trunks occupy the most protected parts, and in the sense of flexion at joints, where they are much protected from external injury. They are usually tolerably direct, and are flexuous only at points where the bulk is liable to variation, or where the mobility is very great—the stomach, the uterus, the neighbourhood of joints, the iris.

WOUNDS OF THE ARTERIES.

By *wounds of arteries*, we mean not only the solutions of continuity produced by cutting instruments, but all the injuries of their parietes by any external cause. Thus we include contusions, incomplete section by ligature, or other causes. A wound may be *penetrating* or *non-penetrating*. If it destroy the external tunic only, the injury is repaired, and often without obliteration of the canal. This injury does not, as was supposed by Calisen, end in the formation of an aneurismal tumor. If, however, the external and middle tunics be destroyed, Haller believes that a dilatation of the internal tunic, so as to constitute an aneurism, is the result. He states that he had witnessed such a result in the mesenteric artery of a frog. Lancisi believes that certain aneurisms of the bend of the arm, succeeding to bleeding, were thus produced. The experiments of Hunter are decidedly opposed to this view of the subject; there may be rupture of the internal tunic, but not dilatation. Upon this point there is a singular circumstance mentioned by Guthrie, in a case of hæmorrhage proceeding from the internal jugular; the two lips of the wound were seized by a tenaculum; a ligature was placed so as not to interrupt the continuity of the vessel. The carotid was seen; its external and middle tunic were destroyed; the internal was intact: it was not tied. On the eighth day it opened, and a mortal hæmorrhage resulted. The wound of the jugular was cured, and its canal was unaffected.

If the wound be *penetrating*, it may vary—it may be a puncture, it may be an incision; in which case it may be transverse, oblique, or longitudinal—it may affect a fourth, a half, or three-fourths of the circumference of the vessel; and of course the dangers vary with the direction and extent of the wound. When a vessel is completely divided *transversely*, the blood flows rapidly. If the artery be large, the external wound extensive, and not soon united, the flow of blood usually continues until the animal dies. If the wound be immediately brought together, death follows less rapidly, or syncope may happen, and the hæmorrhage be completely suspended, or it may reappear at intervals, until the animal dies or until he recovers. If the artery be of a middle size, the chances of death are less urgent.

Difference of opinion exists as to the mode in which the suspension of hæmorrhage occurs in such cases. In 1733, Petit maintained that it was caused by the formation of a clot, of which one portion surrounded the end of the vessel whilst the other formed a central plug, which was inserted a certain distance into the canal:

thus, by its coagulation, the blood seemed to constitute an obstacle. He went a step further: he distinguished in the clot a white part, which adhered strongly to the lips of the wound in the vessel; and added, that this white substance was formed of that substance which is effused between the lips of a wound, and by which those lips are united. He attached great importance to the clot, and little to the changes which occurred in the parietes of the vessel; and until the time when Morand's opinion was expressed, in 1736, this opinion prevailed. He maintained that there was a circular contraction or puckering of the extremity of the artery; that the longitudinal fibres also contracted, and that the diameter of the canal was thus materially lessened; these two causes concurring with the clot to suspend the hæmorrhage. With the exception of so much of his explanation as attached to the longitudinal fibres, the views of Morand were sound. These views were reproduced by Sharp, in 1739. In 1760, Pouteau, and before him, Gooch, rejected this doctrine. He said that the clot could not be the principal obstacle, because it was so small; it was not the retraction of the arteries, for that was not constant. The true cause, he thought, was in the tumefaction and induration of parts around the artery, which, by compression, effaced the cavity of the vessel. This doctrine was opposed by Gooch, White, Bell; but their principal attack was directed against Petit. Kirkland and White believed that the clot had nothing to do with the suppression; that it was an obstacle to the cure. The former amputated the thigh of a horse; the hæmorrhage was commanded by circular pressure. The horse was killed, and no clots were found in the vessels, but they were contracted. White mentions a similar fact. Indeed both of these men held, that so far from being beneficial, the clot is prejudicial; for, not adhering to the vessel, it may be expelled at any moment, and hæmorrhage may follow. Jones, by his numerous and conclusive experiments, reconciled the difficulties: he shewed that the several theories to which I have alluded failed, because they were too exclusive. His experiments were repeated, and the accuracy of his results was confirmed by Beclard. He proved that the blood, the parietes, the sheath, the surrounding cellular tissue, the retarded circulation, and the secretion of organizable matter, all concurred to arrest the hæmorrhage. He proved that certain obstacles were temporary, provisional; whilst others were permanent, definitive.

Those experiments shew, that when a large artery is cut across, the blood escapes by a full jet. Immediately after

its section, the artery tends to retract within the sheath; but this tendency is at first counterbalanced by the strong impulsion of the blood. Soon, however, the energy of the circulation diminishes, and the artery is withdrawn within the sheath. The portion of the sheath then projecting beyond the vessel, does not constitute a canal with smooth walls; the blood coagulates upon the connecting fibrillæ, and the external clot is thus formed. While the external clot is forming, another thin conical clot is also formed in the cavity of the vessel; its summit directed towards the heart, its base towards the opening. If a collateral vessel be given off near this clot, it is short; if not, it is longer. Beclard compared the arrangement to that of a bottle corked and waxed. At first the contraction extends to only a very short distance from the divided point, and, according to Guthrie, if with a fine seissars this contracted portion be cut off, it bleeds anew, but gradually the contraction extends to the next collateral. Jones believed that the internal clot contributed little to arrest the hæmorrhage—sometimes even it is absolutely wanting. The external clot is of more importance; but my opinion (and it is also that of Guthrie) is, that the contraction of the artery is the agent by means of which the hæmorrhage is suspended. Still so much is certain with respect to the inner clot, that often, if it be withdrawn, hæmorrhage recurs.

Soon the definitive process commences, inflammation sets in at the divided point, lymph is poured out, and the whole is consolidated into an apparently homogeneous mass. At a later period, both clots are absorbed, and the artery begins to contract, and becomes, in process of time, converted into a ligamentous mass. At a still later period, though this is not always the case, the vessel itself becomes absorbed or converted into cellular tissue.

Such are the circumstances which are observed in the portion nearest to the heart; in the other portion, when the anastomoses are considerable, the blood escapes freely, but this depends upon the completeness of the anastomoses; they may be so deficient that the blood escaping shall appear to be venous. This was observed by Hunter and Guthrie.

Jones's observations shewed that the most distant portion was the most contracted, and the external clot the smaller. This is opposed to the opinion of Guthrie. Are there any other causes of suspension of hæmorrhage after a transverse section? Some physicians maintain that the blood itself has the faculty of transporting itself where it is required, and of avoiding passing into an open artery. Koch says the blood will choose for itself the channel

through which it ought to pass; there is, then, nothing astonishing in its being able to avoid passing by the open orifice of a vessel. The elder Koch had not tied any vessel after amputation, for twenty years. He states, that, tied or not, arteries remain completely permeable, dilated, and generally empty, up to the place of section.

It is difficult to conciliate these and other facts (for facts they are) with our ideas of the circulation. How far the absence of capillary attraction may explain it, is not easy to say. It would seem, however, that it is in cases of amputation that arterial hæmorrhage is arrested with the greatest facility. There are certain curious experiments which appear to prove that when the blood arrives at the bifurcation of an artery, it enters the branch which is intact, and does not pass along the wounded branch (Kaltenbrunner). The experiments which I have made on this subject, do not confirm that idea. In the *Journal Hebdomadaire* is a paper, by Velpeau, containing fifty-six cases of wounds of arteries, where hæmorrhage has either not occurred or has been rapidly suppressed. Some, it is true, were cases of laceration, some were gun-shot wounds, some amputations performed in cases of sphacelus; but a considerable number were cases of complete section by cutting instruments.

The puncture of an artery may occasion, at first, a considerable hæmorrhage, but it is usually soon moderated; blood escapes into the sheath, parallelism is destroyed, a coagulum is formed, the opening is blocked up, and the artery remains permeable: occasionally, however, the hæmorrhage is very obstinate, and it was in consequence of this circumstance that the ancients recommended and we employ complete section. Simple punctures have occasionally given rise to secondary hæmorrhage; Guthrie relates two cases.

ST. BARTHOLOMEW'S HOSPITAL.

*From the Report of the Commissioners
concerning Charities.*

JOINT REPORT OF MR. WROTTESELEY AND
MR. SMITH, DATED JUNE 1837.

THE origin of this establishment is referred, by Stow and other historians, to Rahere, the minstrel of King Henry I., who, having founded the priory of St. Bartholomew's upon a vacant space in Smithfield, granted to him by the king, annexed to it, about the year 1122, an hospital. Here he provided for the relief of poor and sick persons and of pregnant women; and in case of the death of the

latter, for the children who should be born there, until they attained the age of seven years. No record of this grant is preserved; but a charter of Henry I., bearing date 1133, is extant, by which certain privileges were granted to the church, to Raherus the prior, the canons, and the poor of the hospital. The tomb of Rahere still remains in the church of St. Bartholomew the Great, in Smithfield.

Alfune, a man distinguished, among other charitable works, for building the church of St. Giles Without Cripplegate, the first "hospitaller or proctor for tending the poor," used daily to beg for their relief at the adjoining market and shambles of Smithfield. The annexation of the hospital to the priory was confirmed by a charter of King John; and various grants of property, including 37 acres of ground, situate in St. Giles and St. Botolph's Without, Aldgate, in the eighteenth year of Edward II. are also recorded. In the 11th of Henry VI. an arrangement between the prior and convent of St. Bartholomew and the master and brothers of the hospital, was sanctioned by parliament, by which the execution of the repairs of the "aqueduct in Iseldon, called Cannonsbury, the water whereof was conveyed by pipes underground," was committed to the master and brothers, to be done at their cost; one moiety of the water to be conveyed to the hospital by pipes, and a rent of 6s. 8d. per ann. to be paid to the prior and convent. In 1423 the buildings of the hospital were repaired, at the charge of the executors of the celebrated Whittington.

The Valor Ecclesiasticus gives the following statement of the real property of this hospital at about the year 1530:—Rents in and near London, 229*l.* 4*s.* 6*d.*; in Middlesex, 30*l.* 11*s.*; in Essex, 38*l.* 6*s.* 8*d.*; in Berks, 12*d.*; in Northampton, 6*l.* 6*s.* 8*d.*; in Somerset, 3*l.* 6*s.* 8*d.*; in St. Alban's, 6*s.* 8*d.* Total, 371*l.* 3*s.* 2*d.*, subject to payments of 66*l.* 6*s.* 9*d.*; leaving a net income of 304*l.* 16*s.* 5*d.* per annum.

Soon after this period the monasteries were suppressed, and the property of St. Bartholomew's Spytell, as well as of St. Mary's Spytell and St. Thomas's Spytell, was for a time possessed by the crown. In 1544, after an unsuccessful petition from the corporation of the city, that the king would grant them the disposal of the funds for the relief of the sick and poor, Henry VIII. issued letters patent, by which (after stating that the hospital was then vacant, and that its property had fallen into his hands) he declared, "that there should be comfort to the prisoners, shelter to the poor, visitation to the sick, food to the hungry, drink to the thirsty, clothes to the naked, and sepulture to the

dead administered there;" erected and founded an hospital, to consist of one master and priest, and four chaplains priests; to whom he granted the site, ambit, and precincts of the hospital and church, with the goods and chattels thereof, to hold the same in pure and perpetual alms. The government of the hospital was lodged in the body thus constituted, but the possessions were not regranted to them, and it does not appear that the new constitution ever came into active operation. But in 1546, a charter was granted, after repeated solicitations, to the corporation of the city, by which the hospital was to be refounded for the reception of one hundred poor and sick persons, and was endowed with 500 marks per annum from its former possessions, on condition that the citizens should be bound yearly for ever to give other 500 marks for the same use and intent. This agreement was executed on the 13th of April, 1546.

The charter was granted January 13, 1547. By it the king gave to the corporation numerous detached pieces of property, including the hospital with its church and land, the church, lands, and precincts late of the Friars Minors, commonly called the Gray Friars—which, with houses in the adjacent parishes of St. Nicholas and St. Ewine, and of St. Sepulchre's Within Newgate, were erected into the parish of Christ Church Within, Newgate—various messuages, chiefly situate in the streets adjacent to the hospital, some yearly rents from tenements in the same neighbourhood, and lands in different counties, which had formerly been part of the property of the old hospital and convent. The hospital was to be called "The House of the Poor, in West Smithfield, near London, of the foundation of King Henry VIII."

In return, the corporation agreed to grant a residence and an income of 26*l.* 13*s.* 4*d.* to the vicar of Christ Church; a residence and an annuity of 13*l.* 6*s.* 8*d.* to the vicar of St. Bartholomew's-the-Less, and other proportionably smaller incomes to the visitor and five other priests, who were to officiate in the hospital, visit the prisoners in Newgate, &c. They also agreed to find lodging, food, and "all other things meet, convenient, and necessary," for one hundred poor folks; to maintain a matron and twelve women attendants under her; to give appropriate salaries to a visiting priest, "the hospitaller," a parish-clerk and a sexton, a steward and collector, a porter, butler, and cook. (The salaries of the five last officers were to be 5*l.* 13*s.* 4*d.* to the two first, 5*l.* to the porter and cook, and 4*l.* to the butler.) They further covenanted to find eight persons to be beadles, "to bring thither such

poor, sick, aged, and impotent people, as should be found going abroad in the city of London and the suburbs thereof, and to expulse and avoid such valiant and sturdy beggars as they should find." Lastly, they agreed that they would find perpetually one person sufficiently learned in the science of physic, and one other person having sufficient knowledge of surgery, to be continually attendant on the sick and sore people, to minister to them from time to time such things as should be needful for their sickness and diseases; that they should give and pay to the physician 20*l.* per annum, and to the surgeon the same; and that they should buy and provide all manner of apothecary's ware, and other things necessary and convenient for the making of salves, and all other things touching physic or surgery, for the help and healing of the said sick poor and impotent people.

Such was the charter for the renovation of St. Bartholomew's. Stow says that the houses which formed the bulk of the property thus granted, were for the most part decayed or leased out at inadequate rents, and that the citizens were at great expense to obtain from them the full income of 500 marks. The temporary deficiency, however, was supplied by liberal contributions, which were chiefly made at the instigation of Sir R. Dobbes, the mayor, and the same property now forms the main bulk of the resources of the hospital.

In 1548, the management of the hospital was intrusted to four aldermen and eight commoners, who were to remain in office two years; one half going out each year. Of these, one was president, four surveyors, four almoners, one treasurer, and two scrutineers. At this time, also, there were three surgeons, with salaries of 18*l.* each. In 1552, the annual expenditure, including the salaries of the clergy and the diet of the poor, at 2*d.* per diem each, was about 856*l.* per annum.

The hospital continued under the same management till 1557, when, having been previously dissociated from them, it was connected with the other royal hospitals (Christ's, Bridewell, and St. Thomas's), and placed under the same government with them, according to articles entitled "The Order of the Hospitals of King Henry VIII. and King Edward VI." In this order, a comptroller-general and a surveyor-general, both of whom were aldermen, were appointed over all the hospitals, and, for the government of each, three aldermen, a treasurer, and eight other citizens.

From this period to 1782, the corporation appear gradually to have allowed their privileges of government and control over all the hospitals to decline, or to have

made only ineffectual attempts to exert them, as the number of governors unconnected with the corporation, but whose accession to the hospitals was highly beneficial by their donations and support, increased, and assumed so much of the power of management, as left to the corporation only a formal right of confirmation of the lists of governors presented to them each year. The disputes which ultimately arose on the respective rights and powers of the corporation, and of the elected and acting governors, had principally relation to the management of Christ's Hospital, but were settled for the government of all the royal hospitals by an act of parliament, passed in 1752, entitled, "An act to render valid and effectual certain articles of agreement between the Mayor and Commonalty and Citizens of the City of London, Governors of the Possessions, &c. of the Hospitals, &c., and the Presidents, Treasurers, and acting Governors of the said Hospitals.

By this agreement between the corporation and the elected governors, confirmed by the act, all the then governors of the several hospitals were first established in the rights and privileges which they had lately enjoyed; and it was agreed that the governing body should thenceforward be composed of the elected governors, with the lord mayor, the aldermen, and to each hospital twelve of the common council, elected at one of their courts.

From the passing of this Act the entire government of St. Bartholomew's has rested with the general body of the governors, who are distinguished into chartered or corporation governors, and donation governors. The former comprise the whole court of aldermen, and twelve common council-men. The number of the latter is unlimited: they are elected from persons who have subscribed 100*l.*, or who, if proposed or nominated by a governor who has served the office of steward, have subscribed 50*l.*; in either case the nomination has to be approved at a meeting of the house-committee, and at a general court. The present list of governors contains 281 names; and the president, the treasurer, the almoners, and the different committees of management, are selected by the general court from the whole body.

Four general courts are held annually on the 4th Wednesday in January, April, June, and November; and at these are elected the president, treasurer, almoners, and three committees. Here also vacancies are filled up in any of the more important offices in the establishment.

The almoners are four in number, and each serves four years, one being elected, at each July court, from the governors who

have been or are on the house-committee. The house-committee is, in effect, the governing body of the establishment. It consists of the president, treasurer, almoners, past-almoners, and twenty-one governors, who serve two years, and of whom ten or eleven go off annually. This committee usually meets once in every month, and as much more frequently as may be necessary; they regulate generally the affairs of the hospital, subject to the approbation of the general court; they also have to approve of governors before being submitted to the same court, and to appoint such officers and servants as are not appointed at it.

There is also a committee of auditors, who meet quarterly, and an apothecaries' committee, consisting of the president, treasurer, almoners, past-almoners, and all such governors, in any way connected with the medical profession, as have been stewards at an anniversary dinner: they are summoned quarterly to direct the purchase of drugs for the use of the Hospital.

The officers of this Hospital are as follows:—

A President, whose office is for life, and merely honorary. He is usually selected from the aldermen; and the office is frequently conferred on the Lord Mayor at the time of the vacancy occurring. It is at present held by Alderman Lucas.

A Treasurer, who is annually re-elected at the July court. He has a house within the Hospital precincts, and has control over all the inferior officers and servants, with a power of suspension *ad interim* in case of misconduct. He receives and reports all moneys; and all payments above 20l. are made by him. He has to return his accounts monthly and quarterly—is a party to all investments of money, and has to survey all property previously to its being let, &c. With the exception of the unfurnished house, no remuneration is received by the treasurer; and the expenses which his office entails are greater than the advantage he receives from the balance which is allowed to remain in his hands. The office is at present held by Thomas Helps, Esq.

The almoners, whose office it is to attend every Thursday to discharge and receive in-patients, and to admit or continue out-patients: they also direct the provision of all stores, inspect and sign all bills before they are paid, audit accounts, and attend the treasurer on various hospital business. Their office is entirely gratuitous.

The Hospitaller or Chaplain, the Rev. Samuel Wix, is also vicar of St. Bartholomew's the Less, a small parish containing only twenty-eight houses, the property of the Hospital. His attendance in the Hospital consists in performing the morn-

ing and afternoon services in some of the wards on each Sunday, reading prayers daily in one ward in each wing alternately, and visiting such patients as desire his attendance at any time.

The Clerk, Mr. J. Wood, performs the various duties of secretary to the establishment. The steward, Mr. W. Wix, superintends its whole interior economy. The renter, Mr. Wilby, has the charge of collecting the yearly rents, in town and country, the tithes, and other annual payments. The surveyor or architect, Philip Hardwicke, Esq., has the general superintendence of the buildings.

The medical and surgical establishment is composed of three physicians and three assistant physicians, three surgeons and three assistant surgeons, who are appointed by the general court. There are also three resident house-surgeons, a resident apothecary, who is considered as the resident medical officer, and an assistant apothecary.

Each physician attends, at least, three days in each week; often every day, and occasionally twice in the same day. One of the physicians and one of the surgeons attend the almoners on every Thursday for the admission of in-patients. Their only emolument from the Hospital funds is a salary of 105l. each; but the pupils' fees for medical practice, and the opportunity of becoming a lecturer in the school, form a very considerable source of profit. Each physician has one, two, or three pupils as clinical clerks, who are allowed to prescribe simple remedies in his absence, and who pay no additional fee for this privilege.

The assistant physicians attend on alternate days from 11 till 2, or longer, to prescribe for the medical out-patients, and medical casualties, *i. e.*, all such as apply for medical aid without having been made either in or out-patients. Their remuneration is 100l. per annum. Each usually takes charge of the in-patients of the senior physician with whom he is particularly associated, for three or four weeks in the year.

The rules of the surgeons' attendance are the same as for the physicians; but their actual attendance is also much more frequent than is absolutely prescribed for them, a daily visit being always made by each in those weeks in which the accidents are assigned to his charge, and generally in every week more than the three visits which are required by the orders of the Court. The stipend of each surgeon is 40l. per annum; and a gratuity of 30l. is annually voted to each by the general court. A payment of 7l. 10s. is also made quarterly to one of the three for the performance of the operation of lithotomy,

and two guineas annually to each in lieu of other small privileges formerly allowed them. Each surgeon nominates six dressers and a house surgeon annually. The assistant surgeons have no duties in the Hospital, except when called upon to act as deputies for their respective principals. [Since the report was made, duties have been assigned to the assistant surgeons corresponding to those performed by the assistant physicians, and for which each of them now receives a similar salary].

The apothecary is the resident medical officer of the establishment, which he never quits without leave of the treasurer, or two almoners. He has to attend the admission of patients, both on the usual admission day and in casualties, to visit the wards morning and night, and to have the charge of the medical patients in the absence of the physician. He is also required to keep open the dispensary from 9, A.M., to 8, P.M., for the dispensing of medicines, to keep an account of the drugs consumed, &c. His salary is 400*l.* a year, and he has a house in the Hospital precincts. He is permitted to take two apprentices, but is strictly debarred from private practice.

The three house surgeons are nominated annually by the surgeons from among their dressers upon payment of a fee of fifty guineas. Their appointment is subject to the approval of the house committee and general court, which approval, however, is never withheld: they reside within the building, and are expected to be in attendance, by turns, day and night. They receive each a salary of 25*l.* per annum from the Hospital; but no allowance is made them for attendance, &c.

The dressers do not, properly speaking, form a part of the Hospital establishment, and receive no emolument from its funds. [Their duties are probably well known to most of our readers].

The sisters of the wards are twenty-nine in number, one superior attending each ward, and one attending on the casualty patients. They are to be in constant attendance on the patients, and to carry into effect the directions of the medical officers. The salaries of the majority vary from 14*s.* to 20*s.* per week; the four senior sisters receive from 22*s.* to 31*s.* 6*d.*; they have each annually a gown and a cap, and a gratuity of a guinea or a guinea and a half. A dinner is provided for them at the Hospital expense on Sundays only.

The nurses are seventy-five in number, being generally two to a single ward, and three to a double ward: they act under the sisters, and perform all the usual duties of servants. They receive 7*s.* weekly. They are allowed two gowns and

a cap each year; half a loaf and a pint of beer, and the meat from the broth daily, and a dinner on Sundays. Fifty of the number discharge, in rotation, the duty of night nurses, for which an additional 1*s.* 9*d.* per week is allowed them.

Admission of Patients.—The strict rule of the Hospital is, that patients should be received only with a petition signed by a governor, or upon a recommendation from the Lord Mayor or the presiding magistrate at the Mansion House or Guildhall, or (though this custom has now nearly lapsed) from the Board of Admiralty. The real criterion of admission may, however, be fairly stated to be the urgency of the patient's case, as not only have all cases a preference on the ordinary admission day according to the degree of their urgency, but cases of accidents are admitted at all hours without any order whatever. Foreigners are admitted on the same terms with natural-born subjects; and infants with (if necessary) their mothers to attend upon them. Thursday is the ordinary admission day. The applicants meet in the steward's office at 11, A.M., and are examined by the physician and surgeon of the week and their assistants. The most urgent cases are admitted; and those who remain after receiving as many as will fill the vacant beds in the Hospital, are, if necessary, made out-patients. Small-pox is the only disease against which the doors are absolutely closed. Fees were formerly required from each patient on admission; but, in 1821, these were abolished, and no payment whatever is now required from any patient.

The security of a householder is still nominally required, for the removal of a patient when cured, or his burial should he die in the hospital; but, in fact, not half the patients tender any security at all, and many of the householders, whose signatures are accepted, are not of such a class as to make the security available.

In the case of parish paupers, the steward applies to the parochial officers for the usual security, and for the payment of 9*d.* per day for the support of the patient; but the demand is constantly refused upon some excuse; so that for 200 or 300 patients of this class admitted yearly, the amount actually obtained for the hospital does not exceed £20 per annum.

Wards.—The hospital contains 28 wards, of which 7½ are devoted to medical and 21 surgical patients—of the latter, five are appropriated to venereal patients. The total number of beds is 533; of which 169 are for medical and 364 for surgical cases, about 60 of which, on the ground-floor, are appropriated for accidents. The patients in each department are divided equally

to each physician or surgeon, so that each of the former has always upwards of 50 patients, and each of the latter about 120. All the beds vacant in the hospital are filled up on each Thursday, with the exception of 15 or 20, which, unless in circumstances of unusual pressure, are reserved for casualties during the week. Under such circumstances, also, one, two, or three extra beds are fitted up in the several wards.

There are no wards appropriated to infectious diseases. Patients in raving delirium, or who are otherwise productive of serious annoyance to those around them, are removed to private rooms, of which there are sufficient to accommodate about four patients. Experience has shewn, that double wards (*i. e.* such as are composed of two parallel rooms opening into each other, but with only one general entrance) are managed with much greater convenience and economy than single ones.

About 130 persons, including venereal patients, apply to this hospital for admission every week; and of these the average weekly admissions, in 1836, amounted to 52 on each Thursday, and on the other days of the week to 34; making a total of about 5,500 in the year. In the same year the out-patients amounted to 8,238, and the casualties to 20,543. Each patient, on admission, is, if necessary, washed in the warm bath; his money, if, as it rarely happens, he has any, is usually taken charge of by the steward; his clothes, if very ragged or filthy, are destroyed, and new ones supplied. Directly after admission he is visited by the physician or surgeon in attendance, or, if received at times when they are not present, by the apothecary or house-surgeon, and the necessary medicines, diet, &c. are ordered.

Funds of the Hospital.—The total amount of contributions, in money, for the general purposes of the hospital, up to September, 1836, had reached upwards of £195,000, exclusive of nearly £41,000, subscribed for the special purpose of erecting the present buildings of the quadrangle of the hospital between the years 1729 and 1748. The total pecuniary contributions, therefore, have been £236,019. 7s. 6d.

The actual property of the hospital is as follows:—

The rental of the houses belonging to the hospital, in London and its immediate vicinity, comprising the earliest acquired and the larger portion of the estates, which are chiefly situated in its neighbourhood £17,011 19 1
Rental of the landed estates of the hospital, situate in different parts of the kingdom, let on farming leases, or at a rack-rent. 6,187 2 7
Quit-rents, comprised in the

charter of Henry VIII., and rent charges, with annuities and fixed payments not charged upon land	1,119	19	10
Land-tax redeemed,	635	4	4
Tithes of the parish of Christ Church, within Newgate	186	18	1
Dividends on stock	5,236	11	4
Casual and fluctuating sources of income	787	19	9
	<hr/> £31,165 15 0		

The average income of the six years, including 1830 and 1835, was upwards of £32,170, and the balance brought forward each year averaged between £6000 and £7000.

From the expenditure for the same period it may be sufficient to extract the sums appropriated to the more important purposes, among which we find—

	£	s
Charges on account of the estates (average about)	2825	0
St. Bartholomew's Church	407	11
Christ Church	106	0
Tradesmen's and workmen's bills for repairs and new buildings, furniture, stationery, oil, candles, &c. about	5600	0
Provisions, about	4700	0
Apothecary's shop	3750	0
Salaries to officers and sisters, about	4850	0
Wages to nurses, carpenter, watchmen, &c.	2600	0
Annuities, gratuities, and pensions	750	0
Coals	800	0
Hospital dinners	350	0

With other more variable or less important expenses than the above, the average outlay of the hospital in the same six successive years has amounted to upwards of 33,160l.

Of the provisions, the meat, bread, butter, beer, and milk, are supplied by contracts, which are usually entered into half-yearly, and invited by public advertisement.

The supply of articles for the apothecary's shop is managed by the apothecary's committee. It is usual to make up in the hospital all the compound substances, which are consumed in such quantities that they can be prepared in the laboratory more cheaply than they can be purchased; and a circular is usually sent to some of the chief London druggists, inviting them to send samples of the different articles required, with their prices. From these the committee, assisted by the lecturers on chemistry and materia medica, make a selection.

The only instance in which the hospital has been supplied with stores, or materials to any extent, by a governor, appears to be in the article of drugs. For the eight years preceding 1836, an average of one-fifth of the drugs were purchased of a governor; but no governor by whom a sample is sent in is ever summoned on the committee for the selection of the articles.

Medical school.—The introduction of lectures at this school is of very recent date, and but little prior to the erection of the anatomical theatre in 1822. Mr. Percival Pott about seventy years ago delivered occasional lectures; but the late John Abernethy may be called the founder of the present system, within so short a period as eighteen years from the present time (1836). In 1822, Mr. Abernethy first proposed to the governors that the collection of anatomical preparations which he had formed, and the library, which he and the other surgeons had principally contributed to accumulate, should become the property of the hospital; and that, in return, the governors should provide greater facilities for instruction to the pupils than the existing buildings afforded. Mr. Stanley became joint lecturer with Mr. Abernethy about 1824; and with this gentleman's consent the above arrangement was carried into effect in 1828, and the museum was presented to the governors. It has been since maintained and increased entirely under the eye of Mr. Stanley, and from the produce of the anatomical lectures delivered by him. It is open daily to all the pupils of the hospital and attending lectures, and (by the courtesy of the officers) to strangers.

For the buildings intended to facilitate the communication of medical knowledge, the governors have devoted a portion of their funds, not exceeding in the whole 5000*l.*; and "to us it certainly appears that the immediate benefit arising to the patients in the establishment from superior skill and science in those pupils who give subordinate assistance in the situation of dressers, and the incentive to diligence and attention afforded to the principal medical officers by the constant presence of so many keen observers as are thus brought around them, independently of the inappreciable good effected by the general diffusion of medical knowledge, fully justify the application."

On a vacancy occurring in a lectureship, the medical committee, consisting of the physicians and surgeons, with the assistants who are lecturers, meet and agree upon the party whom they shall recommend to the house committee; and if the latter approve of the nomination, it is submitted to the general court.

ON THE FREQUENCY OF THE PULSE AT DIFFERENT AGES

IN MALES AND FEMALES.

By W. AUGUSTUS GUY, M.B., Cantab.,
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London.

THE knowledge which we possess of the frequency of the pulse at different ages is altogether unworthy of medicine, considered as a science, and unequal to its requirements as a practical art. A few careless estimates, for the most part very wide of the truth, and some calculations founded upon incorrect data, make up the sum of our information. The only parts of the subject which have been examined with any care are the pulse of the fœtus, of the child during the earliest periods of life, and of persons in advanced age; the rest is a mere blank. The works which have been written on the pulse are not only barren in general results, but they furnish very few materials which can be made available to the building up of a science. It was necessary, therefore, to have recourse to observation, and to collect a large number of facts before any progress could be made in this department of physiology. The observations which I had already collected, with a view of illustrating the effect of posture on the pulse, supplied me with a large number of such facts, and formed a strong inducement to add to them, and to make the frequency of the pulse at the several periods of life the subject of a separate essay.

The observations contained in the annexed tables have been derived from different sources. By far the greater number have been collected by myself, a few have been contributed by friends, and a still smaller number have been taken from books. Of the observations which I have myself collected, a large proportion, at all ages, have been made on my friends and acquaintances; the rest have been obtained in schools and workhouses*. The observations

* I must here acknowledge my obligations to my friend Mr. Reid, of Bloomsbury-square, for the opportunities which I have enjoyed in St. Giles's Workhouse. I have also to return my best thanks to Mr. Burgess, the apothecary of that institution, for his obliging assistance; and Mr. Hewett, the master of the Holborn Union, for the facilities which he has afforded me.

gleaned from authors, or contributed by my friends, were made under the same conditions, and with the same precautions as my own. The twenty-five observations on the pulses of children, under one week old, have been drawn chiefly from books; and the works of Floyer, Falconer, Nick, &c., have contributed some observations on persons of advanced age.

The observations were made between the hours of 11, A.M., and 2, P.M. Those collected in schools and work-houses were taken between 11 and 12; the remainder, for the most part, between 12 and 2. A few observations taken from authors were made before breakfast, fasting. All the parties examined were in the sitting posture, except the children under a week old; and some few of the old persons of both sexes, who, though in the enjoyment of good health, were bed-ridden. These were examined in the recumbent posture. In every instance the subjects of the observation were in apparent good health, in a state of rest, unexcited either by food or exercise. I was very careful to exclude all those cases in which I could detect any symptom of ill-health, or any source of excitement*; I also waited some time to allow the pulse to regain its natural frequency, when it appeared accelerated by fear or timidity.

The pulse, therefore, was taken, with the exceptions already mentioned, in the sitting posture†, in the middle of the day, and in a state of complete rest.

In the subjoined tables the several observations have been arranged in the order of their magnitude, the highest pulses being placed at the heads of the several columns. It has seemed advisable to publish all the facts, as well as the results obtained from them, that any one who is disposed to form a more extensive induction may add his own materials to mine. I am by no means inclined to regard these facts as sufficiently numerous, and I propose accordingly to add to them as opportunities offer themselves; in the meantime they will form a near approximation to the

truth, and furnish more precise information than any at present existing. That I might make the tables more complete, I have added a column containing the pulses of children less than one week old. In this column the sex is disregarded; and I have ventured to assume, for the present, that, at this early period, the influence of sex is not very considerable, an assumption which is fully justified by a comparison of the pulses of the two sexes during the first seven years of life. In the arrangement of the tables I have preferred septennial periods as corresponding with the most approved division of human life. The want of a sufficient number of observations on healthy persons, beyond 84 years of age, has prevented me from extending the tables as much as I could wish.

The following Table presents the maximum, minimum, and mean frequency of the pulse, in healthy males, at the several ages specified; as well as the range of the pulse; that is to say, the difference between the lowest and the highest number:—

Age.	Max.	Min.	Mean.	Range.
1 week	160	104	1 28	56
2 to 7 yrs.	128	72	97	56
8 - 14	108	70	84	38
15 - 21	108	60	76	48
22 - 28	100	53	73	47
29 - 35	92	56	70	36
36 - 42	90	48	68	42
43 - 49	96	50	70	46
50 - 56	92	46	67	46
57 - 63	84	56	68	28
64 - 70	96	54	70	42
71 - 77	94	54	67	40
78 - 84	97	50	71	47

There can be no doubt, that if the facts from which these numbers are obtained were more numerous, the maximum, minimum, and mean frequencies would present a more regular increase and decrease. As it is, the maximum and the mean frequencies present a progressive decrease during the first seven periods, and the minima during the first five periods. It will be seen, also, that in old age the pulse becomes more frequent, though the increase is not regular, and is shown chiefly in the maxima.

That the values obtained from the twenty-five observations recorded in the tables form close approximations to the true values, may be inferred from the

* In feeling the pulses of the poor as well as of the rich, I took care to exclude not only all those who had taken food since their breakfast, or exercise immediately before the observation, but those who had smoked tobacco, as this is among the most powerful excitants of the pulse.

† For the sake of accuracy I may state that the back was unsupported.

near accordance of the numbers with those derived from fifty observations. This will appear from the following comparison:—

No. of Observns.	Age.	Max.	Min.	Mean.	Range
25}	2 to 7	128	72	97	56
50}		128	72	97	56
25}	8 - 14	108	70	81	38
50}		108	68	85	40
25}	15 - 21	108	60	76	48
50}		108	60	78	48

The following Table shows the frequency of the female pulse at the several periods:—

Age.	Max.	Min.	Mean.	Range.
1 week	160	104	128	56
2 to 7 yrs.	128	70	98	58
8 - 14	120	70	94	50
15 - 21	124	56	82	68
22 - 28	114	54	80	60
29 - 35	94	62	78	32
36 - 42	100	56	78	44
43 - 49	106	64	77	42
50 - 56	96	64	76	32
57 - 63	108	60	77	48
64 - 70	100	52	78	48
71 - 77	104	54	81	50
78 - 84	105	64	82	41

From this Table it appears that though the variations in the maxima and minima are as great as in the case of the male pulse, the minor frequencies present a regular decrease up to 56 years, and a progressive increase from that period up to 84 years of age. That these numbers also are a near approximation to the actual frequencies of the pulse at different ages will appear, as in the case of the male pulse, from the following comparison of the results of twenty-five observations with those of a larger number:—

No. of Observns.	Age.	Max.	Min.	Mean.	Range
25}	8 to 14	120	70	94	50
50}		120	70	95	50
25}	15 - 21	124	56	82	68
45}		124	56	80	68
25}	71 - 77	104	54	81	50
45}		104	54	80	50

If we regard the occasional irregularities in the decrease or increase of the pulse at the several periods as the necessary consequence of a limited number of observations (a defect which a more extended induction will probably re-

medy), we may state the general result of the above facts in the following terms:—

The pulse falls rapidly during the first seven years of life, less rapidly from 7 to 21, and less rapidly still from 21 to 35; from 35 to 56 it remains nearly stationary, and from 56 to 84 again increases by a few beats. This statement is in strict accordance with the frequency of the female pulse at different ages, and it is probable that it will agree with the male pulse when a greater number of observations shall have effaced the irregularities at present existing. On comparing the male with the female pulse, it appears that

1. The female pulse differs little from the male pulse during the first seven years of life, but after seven years of age the mean pulse of the female exceeds that of the male by from 6 to 14 beats, the average excess being 9 beats, or about one-eighth of the mean frequency in the male.

2. The minimum frequency of the female, at more than one period of life, falls below that of the male, but its maximum frequency is, at all periods, above that of the male.

3. The range of the pulse in both sexes is considerable: in the male it extends from 28 to 56, in the female from 32 to 68 beats; and it is probable that more numerous observations will extend this range still farther. The average range in the male is 43, in the female 48. The observations contained in the tables by no means tend to increase the confidence which the medical man places in the pulse as an indication of disease; on the contrary, they confirm the opinion generally entertained of its extreme fallaciousness. It must be borne in mind, however, that there are two distinct sources of fallacy connected with the pulse; the one inherent in the subject itself, the other dependent on the imperfect manner in which it has been investigated. The former source of fallacy will be increased rather than diminished by every considerable addition made to our facts; the latter will disappear entirely when our facts become sufficiently numerous. Hitherto our knowledge of the frequency of the pulse, at different ages, has been limited to a few rude guesses at the average frequency at one or two periods of life. The maxima and minima have been entirely overlooked; and yet these alone can supply us with data which may

be implicitly relied upon in our investigation of disease. If a sufficient number of observations were collected to determine the maximum and minimum frequencies, consistent with a state of health, at the several ages, it is obvious, that wherever the pulse exceeds the one extreme, or falls short of the other, disease is present, provided that the body is in a state of complete rest. Wherever, on the contrary, the pulse is within the limits of the two extremes, its indications must be extremely fallacious, unless we are acquainted with the frequency with which the pulse beat in a state of health.

It appears from the foregoing remarks, that the present essay has done little more than confirm the prevalent belief in the fallaciousness of the pulse; but by placing some limits to its uncertainty, it has substituted a distinct and well-defined conviction for a vague and general impression; and this is perhaps the only practical improvement of which this and kindred subjects are susceptible. It is by no means improbable, however, that the uncertainty connected with this subject may be in some degree removed by very careful observations, made with a view of ascertaining the influence of temperament, stature, &c.—influences which it is no part of my present object to examine.

In making any practical application of the facts contained in the tables, allowance must be made for the effect of change of posture, if the pulse is examined in the erect or recumbent position.

[Here follow five very elaborate tables, which we regret we cannot give. Indeed, three of them (a page each) would have required to be engraved, as they could not be made up in types. We trust and believe that the author's views are rendered intelligible by what we have given.—ED. MED. GAZ.]

A SHORT ACCOUNT
OF
OPHTHALMIA;
PARTICULARLY AS IT OCCURS IN MALTA.

BY FREDERIC ROBERTS,
Assistant Surgeon, 59th regiment.

INTRODUCTORY REMARKS.—The discrepancies respecting the sources of ophthalmia in this island, have led to a brief inquiry what results numerical calcula-

tions might discover to us in illustration of the history of the disease, and how far the cause of the same may depend upon atmospheric constitution. For this purpose we have placed in juxtaposition the state of the thermometer and barometer, and shown the prevalence of certain winds, and the number of rainy days, in each month—presenting, in a tabular form, the relation the constitution of the atmosphere (thus far) stands in to the number of admissions, with this disease, into the civil and military hospitals of the island.

After shewing to what extent several physical agents may operate, and the circumstances under which they may become influential, we shall consider the nature of the propagation of the disease.

Our object in this article, then, is the application (without doubt very defective) of the statistical test in attempting to fix the cause of ophthalmia in this island, and to show what facts the superficial investigation of our subject permits, as, from the short period we have included, but an incorrect average can be formed of casualties of this sort: still we presume that comparative instruction may be received from small estimates; at the same time, however, admit some uncertainty in the character of our evidence as to the exact period of greater endemic prevalence of the disease, which we shall further notice as we proceed.

On the influence of temperature.—Heat alone has never been considered as the source of ophthalmia in any country, though, in conjunction with strong light, it has frequently been surmised to be so; for it is well known to give rise to amaurosis and nyctalopia, and to produce otherwise much impression on the eye. In looking over the register of the thermometer for each month, commencing with July, 1836, and comparing the number of admissions, we cannot draw the conclusion that they stand in the relation of cause and effect, inasmuch as the admissions during the hot months bear no proportion to those when the heat is less*. And if the primary cause depended upon excess of heat alone, we should expect to find the disease most prevalent when the heat was greatest, as in the hot months of July, August, and September, when the admissions are not always so

* See table at the end.

numerous, in proportion to the degree of heat, as later in the year. That the influence of heat, in conjunction with great glare from the barren and rocky nature of the island, may be presumed, is plausible, inasmuch as the admissions from the country of the labouring classes into the dispensary in the months of July, August, and September, are very numerous*. This supposition is further strengthened by the circumstance, according to the information afforded by the books of Civil Hospital, of the admissions from the country, where the inhabitants are more exposed to insolation, greatly exceeding those from the town, where, again, the inhabitants are much less exposed to the sun. Indeed, out of 250 children in the House of Industry, where little exposure to the sun occurs, and where segregation is established when a case happens, I am informed that there occur but very few cases of ophthalmia in the year: and out of 584 men and women in the poor-house, where the like system of segregation obtains, and where certainly the inmates are old, but six cases of acute and chronic ophthalmia occurred in three years and a half. Amongst the better classes also very few cases happen; but in the poor and military population, a great many.

The period when the influence of heat and light come mostly into operation is in the spring, when people forget that they are exposing themselves to a much greater heat and glare than usual, and to which the extreme intolerance of the same, as the season advances, only prevents them from further exposing themselves. The like again occurs in the autumn, when, with the same obstinacy and perverseness, people think the heat, from it so happening for a day now and again, is abating. This is the more probable when we consider how much the soldier (in whom it is so prevalent) is thus exposed. And again in females, in whom the following table of admissions shews the disease to be twice as prevalent as in males.

Admissions of ophthalmia cases among the civil population.

	Males.	Females.
1836	44	64
1837	58	101
1838	111	184
1839	163	300

* The place of residence of each patient is entered in the admission-book.

N.B. The admissions in 1836 are only for six months, commencing 1st July, and ending 31st December.

This disparity, we are inclined to think, occurs from females not indulging so much in the siesta or day sleep as the men. (protected from the mid-way sun and its glare in the house or shade,) and becoming the victim by domestic occupations requiring this sacrifice in a measure.

We have no numerical proof of its occurring frequently in children, by reason of the imperfection of records to this effect; but, from our own observation, and the traditionary history of the disease, and, indeed, were we acquainted with the relative ages of the population, &c., even from the present tables, we presume it would found to be in a higher ratio in children than in adults, which we should attribute, in a great measure, to insolation by running out of doors in summer, &c.

The greatest extremes in heat and cold take place in March, June, September, October, and November, amounting to a difference of 13 and 14 degrees in the month. Thus the range of the thermometer indicates but an inconsiderable transition from heat to cold, though, however, cold is occasionally very sensible to our feelings when the westerly and keen northerly winds blow in a continued stream against the surface of our bodies. But whether that condition of things termed "checked perspiration," said to be produced by a sudden transition from heat to cold, is likely to be favoured in this island, where the temperature does not dispose, by extreme changes, to any very sudden irregularity in the function of perspiration in this way, is doubtful. To suppress evaporation, or the physical process of perspiration, extreme humidity and a high external temperature are essential; and the nearest approach to this condition of atmosphere is found in the sciroc wind, which again, by virtue of this condition, increases the perspiration by transudation, which depends upon causes inherent in the living economy, but which may be modified by external agents.

The sciroc wind is often warm, moist, and occasionally but little agitated. The hygrometric state of the air at this time, however, we have no means to show. But, supposing that the relative temperatures of the air and of our bodies

were such as to prevent evaporation, there is still that state of things that may be unfavourable to the healthy condition of the body, which, according as the sweat becomes abundant, it spreads over the body, and forms an external layer, which, intercepting the contact of air with the skin, prevents evaporation from the body, and admits that only which takes place at the expense of the layer of sweat always supplied by transudation. However, we can perceive that during this wind, admitting the humidity of the air then, a sudden refrigeration may be produced when the wind rises and sun sets, or when the thermometer falls, constituting a damp cold; to the extent as to diminish the perspiration by transudation, we cannot establish*.

Seeing that we cannot satisfactorily prove any sudden derangement in the function of perspiration, by influence of the physical agents, we should rather say, therefore, that, when the circumstance is favoured, after exposure to relative cold and moisture of the night, especially during sleep, when the power of generating heat is least strong, and that, upon the re-establishment of the inactive circulation in the capillaries, the vessels of the conjunctiva may undergo some comparative increase of injection in its vessels as to amount to the proximate cause of ophthalmia; and more especially when the westerly and northerly winds prevail, which they do as well in summer as winter: it blows frequently a very strong breeze, which, coming in a continued stream, may affect the eye in nearly a similar manner; by irritating the conjunctiva, increase the circulation of, distend its vessels, and produce a catarrh thereof.

On the indications of the Barometer.

—It seems, by the tables, that more changes take place in the elasticity and excitement of the atmosphere in the winter and spring months, and that it preserves a comparative uniformity of pressure during the rest of the year. In no instance does the difference amount to one inch either in the month

or year; whereas, in England, it is two or three inches; and there a variation takes place on a slight change of weather. We can find no connexion with any change in this condition of the atmosphere, and the occurrence of ophthalmia.

On the quantity of rain.—We have no other means than the number of rainy days to ascertain the quantity of rain that falls in the year. It will be seen from the tables that, on the average of three years and a half, the greatest number of rainy days occurred in the months of January, February, March, April, October, November, and December; and the least in June, July, and August. In the two former of these last named months, as indicated by the tables, ophthalmia does not appear to have prevailed much, but in the latter it begins to show its ravages with some influence, and continues its effects with greater vehemence during the next month, September, when but little rain falls. From this state of events a new agent incidentally presents itself, viz. the minute particles of dust that are blown thickly through the air during the summer months, when, as we have before observed, the westerly and northerly winds blow occasionally with great force. From the want of rain to keep down this dust, it may be presumed that it comes into operation as a mechanical agent in producing the disease. Although the circumstances of the occurrence of ophthalmia, and the blowing about of this dust, do not always correspond, which goes only to strengthen the opinion, which we shall more particularly notice in our concluding remarks, that ophthalmia (inasmuch as we adopt this as a plausible but not exclusive cause of the same) is not propagated so much by the endemic influence which originally produces it, as it is by other means.

Night dews have been mentioned as a frequent cause of ophthalmia. As no dew is ever found on the body, by reason of its high internal temperature, it is probable that this notion has continued to be entertained by authors, as handed down to them by writers of old, who supposed dew to *fall*, and to act, which it would, if it fell, as a refrigerating agent. May not such radiation of heat take place from the surface of our bodies, and especially from those parts uncovered, such as the face, during the starry and moon-light nights, with a cloudless sky, as to produce an injurious refrigeration?

* We must explain that, although the calorific function is intimately connected with the vital process of perspiration, and that the effect of cold may be to benumb the function of regeneration of heat, it is not supposed that perspiration, taking both the physical and vital processes connectedly, suffer any obstruction; for if the one is arrested, it will be observed that there is scarcely any possible case when the other is not increased, and so a due balance preserved; and therefore ophthalmia is not likely to be the effect of obstructed perspiration.

On the influence of the sciroc wind.—The scirocco, or south-east winds, it will be seen, prevail mostly in the spring, autumn, and winter; but most constantly in the autumn, and the beginning of winter: occurring, however, more or less throughout the year. Dr. Hennen considered these winds “as one of the causes of the frequency of ophthalmia,” and “that they operated most powerfully in the production of relapses.” Besides predisposing the body to take on, in connection with and when exposed to exciting causes, this action in the eye, we have seen that an injurious refrigeration may take place when the thermometer falls, which, however, is not often the case when this wind prevails. As their prevalence does not always coincide with the presence of this evidence, or is it greatest when they prevail the most, it would thus appear to want that universal influence, and which we should expect to be exerted more generally, and affect all classes, which it does not appear to do. The wind is hot and moist, and its physical action on the surface of our bodies would probably be the same as moisture, and a high external temperature (which more generally prevails than cold when these winds blow) at all times. It has also a decidedly depressing influence, probably by the sweat, supplied so freely by transudation at this time, intercepting the contact of air with the skin, and preventing the vivifying influence of evaporation from the body; rendering it less fortified against the cause of the disease too.

Having thus shown how far these several agents may probably operate, and failed to establish any *facts* further than what is already known, and as we can trace no decided connection between any particular constitution of the atmosphere and the co-existence of ophthalmia, we must then look what other causes there may be: for example, we must observe whether there is any peculiar habit among the people, or whether they are exposed to any particular mechanical or other cause, which may originally produce the disease, but which may be propagated by another.

In the history of the disease, certain phenomena present themselves which strongly incline us to consider that it is propagated by some other cause than a *universal* endemic influence, if we may so express ourselves, which should exercise

its powers more generally; in fact, that it is propagated by contagion. In favour of this argument many facts may be adduced. In different regiments, stationed here from time to time, it was observed to become epidemic amongst the men, and to continue so for an indefinite period, without reference to the seasons, but with, it is said, some diminished vehemence of character; while no such phenomena were observed among the other regiments at the same time in the same garrison. The propagation of ophthalmia by actual contact, and by its miasma floating in the air, is peculiarly favoured in a community like a regiment, where the men are necessarily obliged to live in crowded rooms, furnished with articles fabricated from wool, and supplied at best with but confined masses of atmospheric air, both which are known to retain such poison long. Considering the long time the men are confined to their barrack-rooms, often constructed in bomb-proof buildings not permitting the advantages of ventilation, it is but a natural consequence that such a disease should spread so widely, without proper segregation and strict medical police, which alone will arrest the progress of it, when it once attacks a body of men like a regiment of soldiers.

A native practitioner, belonging to a public institution, tells me, that when ophthalmia occurs in one member of a family, it is frequently observed to extend itself to the others; in which, he supposes, it is favoured by the careless and filthy habits the native poor are prone to: and its appearance and great prevalence in children, and its limitation so much to the poor and military population, would incline to the conclusion, that it was propagated by contagion, whatever its mode of operation. The circumstance of its occurring so much in children of a very tender age, likewise leads us to doubt that night air has much to do with its production, as we should scarcely expect that they would be much, or at all, exposed in that way.

In our own corps we had, last year, the opportunity of observing, that the disease commenced among the children, extended itself to the women, then the married men, and, lastly, the single men of the regiment. In giving this course of the disease, we do not mean to assert that it preserved it so true as to be without exception to this order of succession;

but it certainly preserved this order as to be very conspicuous.

The history of the disease affords evidence likewise that the preponderance of cases were in females, and it is presumed to be so in children; which may be accounted for by its spreading by contagion by reason of the close intercourse existing between them.

The ancient custom of treading out corn with cattle, still in use in this island, and winnowing in the open air, whereby the broken husks get into the eye, have been mentioned to me as accidental mechanical causes of ophthalmia among the peasants.

These incidents may, then, throw some doubt upon what is the exact period of prevalence, depending on periodical and endemic influence, of the disease; and renders it more difficult to determine this period, and consequently the cause of the disease.

We may incidentally mention, that the character of the disease is conjunctival inflammation, with muco-purulent secretion, attended with a sensation of roughness of conjunctiva, with circum-orbital and supraorbital pains, as well as pain in the ball of the eye; becomes occasionally deeper seated, and involves the iris and scleroticæ. It is much modified at times, without any apparent reason; being much less violent one year than another, and much less prevalent also. It is remarkable, that, in the year 1837, as is shown in the table below, both the troops and natives were more exempt from it than usual. It will be recollected, that this was the year the cholera prevailed in Malta. This incident must be considered, as has been observed both by ancients and moderns, that "while the tyrant disease prevailed it usurped complete dominion, and suffered no other disease to appear of an epidemic character."

TABLE, showing the Admissions for the last Six Months in each Year among the Civil Population.

	1836.	1837.	1838.	1839.
July.....	42	8	24	30
August.....	31	20	66	64
September...	26	9	93	105
October....	30	17	76	120
November...	14	20	40	63
December ..	28	13	41	33
Total....	171	87	380	415

TABLE, showing the Admissions for the last Six Months in each Year among the Troops.

	1836.	1837.	1838.	1839.
July.....	15	1	11	9
August.....	14	1	22	11
September...	9	1	25	14
October.....	9	2	29	24
November...	5	7	16	10
December...	11	7	25	6
Total....	63	19	128	74

The cases in the tables were nearly all acute. Indeed, there are scarcely any chronic; all those that were written so in the books were copied into our tables, and mixed up with the rest. No cases of palpebral ophthalmia were entered into the tables.

We consider the tables showing the admissions among the civil population but an uncertain test of the ratio of prevalence of the disease in the population, which amounts to 30,000 in Valetta, and that of Malta, exclusive of Gozo, to 120,000; as, of course, there are many who never seek relief at all for the disease: therefore all the cases that occur do not come to the knowledge of the surgeon, much less registered in public documents. But we may fairly presume it to be so; as, according to the common course of things, the greater number would seek relief when the disease was most prevalent.

It is among the military population, which on an average amounts to 2,500 men, among whom every case that happens is registered, that we must look for a more correct standard of prevalence; which we see fairly corresponds with that, whatever its correctness, among the civil population.

The following Table gives the ratio per 1000 among the Troops:

Ratio per 1000...	1836.	1837.	1838.	1839.
	$25\frac{1}{2}$	$20\frac{2}{5}$	$68\frac{1}{2}$	$68\frac{2}{5}$

The admissions in 1836 are only for six months.

ON THE PROOFS

OF THE

PRESENCE OF FREE MURIATIC ACID IN THE STOMACH,

During Digestion.

By ROBERT DUNDAS THOMSON, M.D.
Physician to the Blenheim-Street Free Dispensary and Infirmary.

This constituted the substance of a communication made by the author to

the chemical section of the British Association for the Advancement of Science, at Birmingham, in August last. The object which the author had in view in this paper, was to shew that the modes hitherto adopted of determining the quantity of free acid were liable to objection, from the circumstance that a material action in the process adopted takes place, of which he has been the first to point out the source. It is possible even that the facts he has ascertained may invalidate altogether the experiments from which the inference has been drawn, that free muriatic acid exists in the stomach. The method which Dr. Prout, and Tiedemann and Gmelin adopted, for ascertaining the quantity of free acid, was to filter the contents of that viscus—to precipitate a portion of the fluid which passed through the filter, by means of nitrate of silver. This afforded an index of the total quantity of chlorine, both free and united. A second portion of fluid was then taken, and heated to redness. The residue was dissolved in distilled water, and precipitated also with nitrate of silver. The difference between the quantities of chlorine contained in these two precipitates of the silver salt was taken as indicating the amount of free acid existing in the fluid contents. Now this mode of determining the question in view appears to be correct, if it were not liable to one objection—viz. may not the loss be occasioned by the decomposition of the common salt during the process of ignition? It is well known that common salt, when exposed to a strong heat, sublimes. It is also known that when steam is passed slowly over common salt in a state of ignition, muriatic acid fumes are disengaged. Further, it has been ascertained, that if anhydrous sulphuric acid be heated in contact with common salt, a portion of the sulphuric acid is deoxygenized, and gives origin to sulphurous acid; the free oxygen passes to the sodium, and forms soda, while the chlorine and sulphurous acid are disengaged; the remaining sulphuric acid, combining with the soda, gives origin to Glauber salt.

Dr. Thomson has pursued the investigation of these decompositions, and has ascertained, that when oxalic acid is heated in contact with common salt, even at a temperature much below ignition, a very considerable decomposition is the consequence; copious fumes of

muriatic acid are disengaged, and carbonate of soda, in a proportion relative to the quantity of muriatic acid evolved, remains behind. Tartaric acid also gives origin to a similar decomposition: with citric acid, copious fumes are disengaged, possessing all the characters of muriatic acid gas, and leaving a residuum of a black colour, which effervesces strongly with dilute acids.

Many other substances exhibited similar phenomena when exposed to the same action in contact with common salt. Saliva appeared to produce some evolution. But with animal substances, the fumes of decomposed matter are so dense and carbonaceous, that the determination of the point is involved in much difficulty. It is quite obvious, however, that the presence of vegetable matter in the stomach cannot fail to interfere with the determination of the amount of free acid in the stomach, according to the process hitherto adopted, if it does not prove altogether erroneous.

There is still another objection to the experiments of Prout—viz. that nitrate of silver will throw down some animal matter from the filtered contents of the stomach, which will certainly interfere with the true weight of the chlorine deduced from the precipitation of the silver salt.

The probable deduction from these experiments would appear to agree with the results of the researches of Schultz, who asserts that there is no other acid in the stomach, existing in a free state, except lactic acid. For the presence of this acid, the recent experiments of Fremy seem to afford an explanation. He has found that the internal membrane of the stomach of the calf is capable of transforming any aqueous solution of sugar into lactic acid. Gay Lussac, however, is not of opinion that this change is an organic one, since it is possible that the transformation may be due to an action purely chemical between the saccharine and organic matter. Indeed we know several instances in which lactic acid is produced by the contact of animal with vegetable substances. It is not so easy to account for the production of free muriatic acid in the healthy state, although there is strong evidence of its being secreted on mucous membranes in the inflammatory state of these textures, as has been shewn by the author. The investigation of this subject is pregnant with the

highest interest to science, since it must be obvious to the most superficial observer, that the solution of the grand question of the nature of the process of digestion can alone afford the key to the nature of most of the diseases to which the human body is subject.

OBSERVATIONS

ON SOME OF THE

CHANGES WHICH ARE PRODUCED IN
THE FORM AND STRUCTURE

OF THE

INFERIOR PART OF THE ABDOMINAL
PARIETES,*By Inguinal and Femoral Herniæ &c.*

BY THOMAS MORTON, ESQ.

Formerly one of the House Surgeons of University College.

THAT an accurate and minute acquaintance with the anatomy of the numerous and varied structures which compose the human body, in their normal and healthy condition, is essentially requisite to the perfect education of every member of the medical profession—no matter what particular department of the science he may afterwards select as the principal object towards which he shall turn his attention, or to the practice of which he may propose to confine himself—I believe no one will be inclined to deny, since we have the authority of the most eminent and distinguished professors of the art, in every age and country, united upon this question, and all bearing their strongest and most unreserved testimony to the truth and correctness of this opinion. Many, indeed, go still farther, and endeavour to show, and not without strong reason too, that the greater number of the most striking and valuable improvements which, in modern times, have been introduced into the practice of our art, have followed, as the certain result, a more careful and correct inquiry into the anatomy of the human frame than had been previously insisted upon; and that it is by establishing strict comparisons between the healthy condition of the various parts of the body and the changes of form and structure which have been induced in them by disease, that we have been enabled to trace back the successive steps of the morbid alterations

to the original point of their departure, and thus to bring, as it were, the whole power of our therapeutical means to bear upon the primitive source of the disorder, to effect the cure of which constitutes the principal aim of our labours.

When we consider, indeed, even though it be for a single moment, how difficult it frequently proves to be for the best educated and most experienced of the members of our profession to recognise, with certainty and exactness, structural disorder while it is as yet in its commencement, and when the distinctive characteristics of the disease are but faintly expressed, on account of the little progress that the morbid action has made; and if, moreover, we add to this consideration another, viz., that it is principally in the earlier stages of structural alteration that we are able to entertain the most sanguine expectations of a beneficial result to be obtained from the judicious administration of such remedies as the history of our art places within our reach, it must be allowed that there exist well-grounded motives which ought to be regarded as sufficiently strong to impel us to pursue, with ardour and perseverance, that course which a firm conviction of the truth of the precept above referred to would incline us to adopt.

It cannot, then, be disputed that he who has neglected to obtain a correct knowledge of anatomy deserves to be estimated as one who is, in no small degree, unfitted for and incapable of engaging in the practice of our profession; and, although it may be urged in favour of the opposite opinion that many instances can be adduced of men, the most ignorant of anatomy, succeeding in the lucrative exercise of their profession, yet, when we institute more closely an examination into the history of their success, we shall almost invariably be able to show that the individuals in question have been successful only from a combination of fortuitous circumstances, and not from any real and intrinsic merits of their own; that they have frequently obtained credit when they ought to have been disgraced, and, that were we to strike a balance between the number of cases in which they have either done nothing at all, when much good might have been effected by one more competent than themselves, or, where they have been

* Read before the Medical Society of University College, London.

successful (so to speak) in spite of their own endeavours to the contrary, in consequence of the very imperfect and incorrect opinions which they had formed of the nature and seat of the diseases submitted to their judgment and treatment, and those instances in which they could fairly prove, with satisfaction to their own feelings, that the beneficial results were obtained solely from their accurate appreciation of all the circumstances connected with the disease, and by their sound and rational practice, the principles of which they had deduced from, and based upon such previous investigations, the decision would be found, after the whole had been summed up, to be very much against their favour. There are some, no doubt, who are so blissfully ignorant as even to be able to enjoy with comfort and pleasure such a position as this; but there are a much greater number of persons who, although they consider it to be too late to learn and improve it, nevertheless feel their situation to be extremely harassing and insecure, conscious that the occurrence of every case of more than ordinary intricacy or difficulty renders them continually liable to be stripped of the frail and flimsy protection which the ignorance or good-nature of the public has hitherto afforded to them.

On the other hand, however, it must be remembered that it is not sufficient that we possess the most correct and intimate knowledge of the healthy anatomy of the human body, and confine our researches to that alone, but that we ought eagerly to avail ourselves of every opportunity which may be presented to us of investigating what are the deviations from this standard produced by the existence of any diseased action; and also to endeavour to connect, if it be possible, each of these morbid alterations with the particular stage of the progress of the disorder in which it occurs, so that we may be the better empowered to adapt our attempts to afford relief more suitably to the true nature and character of the disease at the particular time that it is subjected to our notice. It so frequently happens that diseased action, when once it has been established, brings into existence additional changes in the condition of the structures submitted to its influence, which changes themselves become, in a secondary manner, the causes of a fresh series of morbid

actions which exasperate, obscure, and even completely mask those that were first produced, so that, unless we are prepared to separate the essential circumstances of the complaint from those which are merely concomitant and adventitious, we render ourselves liable to fall into the grievous error of employing means inadequate to effect the ends proposed (though they might be well adapted to ensure success had they been adopted in another stage), at the same time that we neglect the remedies which are really applicable, and which, were they put into force, would be followed by the happiest results. In numberless examples it could be shown that much more harm has been produced by the too careless and ill-timed exhibition of remedies which are proper for one period or effect of diseased action, but ill suited for any others, than if the case had been altogether left to the unaided but simple efforts of nature.

It would not be easy to adduce an instance of any other disease, the early explanations of which have proved to be more erroneous, or concerning the nature and treatment of which greater differences of opinion have been entertained, at various periods, by the profession, than that of hernial protrusions, as they occur in the inguinal and femoral regions, and which, at the same time, could better serve to exemplify how much may be effected towards the correction and improvement of our ideas of the origin, progress, and cure of a disease by a comparison carefully instituted between the healthy condition of the structures that enter into the composition of the regions in which the affection occurs, and the pathological changes which are produced by its presence.

It is not a very long time since the most cruel and barbarous operations were very frequently practised to procure the radical cure of inguinal herniæ*; and it is only since the anatomy

* "The itinerant operators are dextrous in the separating of these organs, without the spectator's ever perceiving it. They make the ligature of the vessels before they draw the testicle out of the scrotum, and with their little fingers, run below the vessels which they have cut, they force it out, and hide it in their hand, in order to steal it into their purses unseen. We have known one of these operators who fed his dog with nothing but testicles; that animal always lying under the bed, or under the table near his master, waiting for the luscious morsel, with which he was regaled, immediately after its extirpation, unknown to the spectators, who would have sworn that the patient had all his parts."—Dionis's *Chirurgical Operations*, p. 167. 8vo. Lond. 1733.

of the parts concerned in the disease has been better understood, that milder and more judicious plans of treatment have been substituted. Nevertheless, in more modern times, it has frequently happened to some of the best surgeons, to be arrested, in the midst of a delicate operation, by the unexpected appearance of a structure, the resemblance borne by which to another and more important one has led them to conclude the operation to be completed, when really it was but half performed, and thus to leave unfinished an operation which had been commenced under the most favourable auspices; and other cases are not wanting, in which the operation had been performed in all other respects with the greatest skill and éclat, but in which it proved to be of no avail, merely because the operator was not aware, or had forgotten, that the naturally delicate membrane of the peritoneum might become so much altered in its structure, as to constitute an insuperable barrier to the return of the strangulated intestine contained in the hernial sac. In other instances, from an incertitude of the precise situation of the structures, which it was essential to their credit that they should avoid doing any injury to, the most skillful operators have been sometimes compelled, much against their own inclinations, to perform slowly, and step by step, an operation which, upon other occasions, they had frequently performed with the greatest ease and dispatch.

Several opportunities having been presented to me of examining, by dissection, the condition of the investments of the hernial sac, as they are commonly described by anatomical and surgical writers, I avail myself of the present occasion to submit to the notice of the society the alterations from the healthy standard that I observed in these instances.

The *skin* is liable to no other alteration that what depends upon the state of the sac, whether it be distended or empty. In the former case the skin was smooth and thin, while in the latter it is flaccid, and thrown into numerous folds or wrinkles.

The *superficial fascia* was found, in one case of very large scrotal hernia, to be very much thickened, and, at the same time, greatly increased in density, and admitting of being readily divided into three laminæ. In five other instances, the superficial fascia presented

its ordinary appearance; being separable only into two lamellæ, betwixt which were situated the cutaneous vessels which supply superficial coverings of the inguinal region. The external pudic artery lay over the middle of the tumor formed by the hernia after it had emerged from the external abdominal ring, or lower aperture of the inguinal canal, and hence must always be divided by the first incisions in exposing the sac of a complete bubonocoele. The superficial epigastric artery usually runs a little farther towards the anterior superior spinous process of the ilium than the commencement of the neck of the sac, and hence it is very rarely injured by the edge of the knife in an operation for strangulated inguinal hernia, excepting in cases of recent incomplete bubonocoele.

The *external spermatic*, and *intercolumnar fascia*, was considerably increased both in thickness and density in four out of five cases of inguinal hernia. In some of these cases it was twice and even three times thicker than it is naturally. In the fifth case, which was one of very large scrotal hernia, it appeared to be very thin and delicate.

The *intercolumnar fibres*, or bands which serve to connect together the pillars of the external abdominal ring, are pushed upwards and outwards by the hernial sac as it protrudes from the inguinal canal, and are thrust together in such a manner as to form, by their close approximation to each other, a broad and very strong fillet, which limits the farther distension of the ring, and thus communicates a circular form to the aperture when distended by the protrusion through it of a hernial tumor. The intercolumnar fibres become, at the same time that they are displaced upwards and outwards, very much increased in thickness and strength; and to this circumstance is owing that sudden constriction in the bulk of the hernial tumor which, in every case of large scrotal hernia, serves to define with precision the situation of the external inguinal ring.

The *external abdominal ring* is frequently distended to the size of half-a-crown, but it rarely exceeds this size. At the same time, the aperture loses the triangular figure which it naturally possesses.

Such of the fleshy fibres of the *internal oblique muscle* as take their origin

from the middle portion of Poupart's ligament, are more or less displaced by the hernial sac as it descends through the inguinal canal; so that they no longer run, in an oblique direction, downwards and inwards to their attachment to the os pubis, but are forced upwards by the rounded anterior surface of the sac, as it protrudes between the lower edge of the muscle and the spermatic cord, and so are made to form a thick muscular arch, the concave of which embraces about two-thirds of the circumference of the tumor as it lies within the inguinal canal.

The *transversalis muscle* undergoes little or no alteration in its form and appearance by the protrusion of the hernial sac through the internal abdominal ring. In some instances it is encroached upon by the hernial tumor, and its lower edge becomes in consequence rather more arched than ordinary, and the conjoined tendons of the two muscles (the internal oblique and transversalis),—where they descend together to be inserted into the inner extremity of the ileopectineal line of the os pubis, and form the inner part of the posterior wall of the inguinal canal,—are displaced more or less inwards, nearer to the outer edge of the rectus muscle; so that instead of extending an inch, and even more than this, from the edge of the muscle, they do not reach more than a quarter of an inch, and frequently even a less distance from it than this. In the healthy condition of these parts, the conjoined tendons constitute a thin and flat band of fibres; but, when an oblique inguinal hernia has existed for a considerable period, and, at the same time, forms a large protrusion, they are no longer apt to resist, and the tendency which the weight of the contents of the hernial sac has to drag inwards that portion of the posterior wall of the inguinal canal, which is composed of the fascia transversalis and the conjoined tendons, and hence they give way, and are pushed aside in the direction of the mesial line of the body, and so change their extended form for that of a thick, narrow, and strong band.

The *cremaster muscle*, in six cases, was found to be very much altered from its natural and healthy appearance. The fibres of the muscle were enlarged to three or four times their ordinary thickness, and had lost their muscular character, having become pale and

semi-transparent: towards the fundus of the hernial sac, the fibres were so much displaced as to present the figure of an irregular net-work, the meshes of which were of very unequal size and irregular figure. In two instances this investment of the sac of the hernia resembled strongly the pectinated appearance which is observable in the auricular appendages of the heart, but they were also much paler in colour. In another instance, which was also a large scrotal hernia, the cremaster muscle had preserved much of its ordinary appearance towards the upper part of the tumor, although it was there slightly stronger than usual; but towards the fundus of the sac it formed a thick layer of dense cellulo-fibrous tissue, of a uniform surface, and possessed of considerable extensibility. The fibres of the cremaster muscle will be found to form one of the coverings of the sac of a direct or internal inguinal hernia in some cases, but this arrangement is contrary to that which holds in the generality of instances of that affection.

When an internal or direct inguinal hernia commences to be protruded through the middle of the inguinal pouches of the peritoneum—that is to say, in the space between the epigastric artery and the ligamentous remains of the hypogastric artery of the fœtus—the peritoneal sac is seldom, if ever, covered by the conjoined tendons of the internal oblique and transversalis muscles; but when it is protruded through that part of the posterior wall of the inguinal canal which is situated immediately behind the internal abdominal ring, and which corresponds to the innermost of the three inguinal pouches of the peritoneum lining the abdominal parietes, the conjoined tendons will be found covering either the whole of the sac or at least that side which is nearest to the mesial line of the body.

The *fascia transversalis* is, in the majority of cases, but little altered from its usual healthy condition, excepting that the internal abdominal ring is greatly enlarged—principally towards the mesial line—by the protrusion through it of the hernial sac. In one case, however, it presented, over the situation of the neck of the sac, the appearance of a narrow, circumscribed, and unyielding band of condensed cellulo-fibrous tissue, of the thickness of fine packing-twine. In the operation

for strangulated hernia, this covering is frequently mistaken for the peritoneal sac, in consequence of its uniform and delicate appearance and texture.

The *subserous cellular tissue* was found, in several instances, to be a little increased in thickness, but unequally so, from the presence of a number of very small bundles of adipose substance that were deposited here and there in its texture. It frequently appeared to be very vascular where it covered the circumference of the neck of the sac.

In small herniæ, and more especially in cases of femoral hernia, the subserous cellular tissue is frequently so much loaded with fat, that it is at first difficult to distinguish it from the omentum. In several instances of femoral hernia, I have observed it form small tumors, which projected through the inferior aperture of the crural canal (the saphenous opening of the fascia lata); and so striking was its similitude to the omentum, that many mistook it for that structure. In a future stage of the dissections, it was found to be, in each instance, a process from the subserous cellular tissue covering the fundus of the sac of a small incomplete femoral hernia.

The *epigastric artery* is frequently observed to be very much displaced from its customary course, by large and old strangling, oblique, or external inguinal hernia. In such cases, this vessel no longer rules an oblique course from about the centre of the crural arch up towards the umbilicus, but, on the contrary, is carried so far inwards towards the mesial line, that it ascends, after running along the posterior surface of the mesial portion, behind the outer edge of the rectus muscle; and thus the obliquity of the inguinal canal is destroyed, and an instance is afforded of the external inguinal hernia becoming direct, by the destruction of the posterior wall of the inguinal canal; a circumstance which, if overlooked, might lead a surgeon into considerable difficulty, were he, in an operation for a strangulated inguinal hernia, where this change in the relative position of the external and internal rings had been effected, to direct (as is taught to be done by some authorities), while enlarging the stricture existing at the neck of the sac, the cutting edge of the knife towards the linea alba.

The *peritoneum*, which forms the

proper sac of an inguinal or femoral hernia, is seldom found altered from its healthy structure and appearance, excepting at the neck or internal aperture of the sac. In this situation, the peritoneum forms a sharp angular fold, the free border of which projects towards the central axis of the sac. The increased action which is induced in the vessels which nourish this portion of the peritoneum, and the adjacent subserous cellular tissue, and that part of the fascia transversalis which is immediately external to it, by the excitement kept up by the presence of the hernial descent, and frequently by the means employed to maintain it reduced, is followed, after the lapse of a longer or shorter period, by the deposition of new matter around the neck of the sac, which probably, in the first instance, is allied in its nature and properties to coagulable lymph, but which eventually assumes the characters of condensed cellulo-fibrous tissue. The neck of the peritoneal sac is also liable to become greatly thickened, from the changes which occur in it when a hernia has been maintained reduced for a considerable period, as, for example, by the application of a well-adjusted bandage or truss; for in such cases the membrane of the peritoneum, where it passes through the narrow aperture of the internal ring, being no longer distended by the descent of the intestine forming the hernia, falls into loose folds, which present the puckered appearance of the mouth of a purse, the strings of which have been drawn closer together. These folds of the peritoneum soon cohere to each other by their opposing surfaces, and in this manner the neck of the sac is increased in its thickness and density, in the same ratio as the diameter of the aperture is diminished. It is by the co-operation of these several causes, that, in dissecting carefully herniæ of old standing, we so regularly meet with a remarkable thickened and contracted condition of the neck of the sac, and which, so far from presenting its ordinary delicate structure, forms an unyielding band, of a dense cellulo-fibrous, or even a cartilaginous nature, and which too frequently becomes, independently of the surrounding muscles, the seat of the stricture in numerous cases of strangulated hernia. This deposition of new matter around the neck of the hernial sac is always followed by a diminution of the calibre of the

mouth of the sac ; and this circumstance may be satisfactorily explained by reference to the strong and firm structures which are situated around the circumference of the internal abdominal ring, and which prevent its development eccentrically, and to the fact that there appears to exist in tissues of that nature and origin, an inherent tendency to contract the diameter of the circle, the limits of which they surround.

That this morbid alteration of the peritoneum forming the neck of the sac is of very frequent occurrence, my own observation permits me to state ; and it is this condition of the parts which must ever prevent the attempt to relieve the stricture without opening the hernial sac, in operations for strangulated inguinal and femoral hernia, from being generally practicable or successful.

We are mainly indebted to Arnaud, the justly celebrated French surgeon, for the first clear description of the fact that the stricture in strangulated hernia has its seat in the thickened neck of the peritoneal sac ; although, in his own time, the opinion which he held was regarded by his contemporaries as exceedingly erroneous and ill-founded. The late Baron Dupuytren was in the habit of declaring it to be his opinion that the stricture would be found to be situated at the neck of the sac in nine out of ten cases of strangulated hernia ; and there are many other surgeons of equal note, both English and foreign, whose testimony is borne in favour of the same conclusion. A knowledge of this fact is of great use in preventing the more frequent occurrence of those cases in which the strangulated intestines have been reduced into the belly along with the hernial sac, and in which the contents of the sac, still remaining tightly grasped by the contracted orifice of the sac, death followed from a continuation of the strangulation, notwithstanding that (to all external appearance, at least) the hernial protrusion had been returned into the cavity of the belly. Arnaud relates the history of a case which strongly illustrates the beneficial influence which his discovery is capable of, in promoting the more effectual relief of some forms of strangulated hernie. Being sent for to Rouen, he was asked, by a surgeon of that town, how it happened that he was unable to return the strangulated portion of intestine, although he had

performed the operation thirty-six hours previously, and in strict accordance with all the rules of the art thus prescribed. Arnaud requested to be taken to see the patient, before he gave his opinion. On seeing her, he considered that the stricture was seated in the neck of the sac ; "upon which," he says, "the surgeon did me the honour of presenting me with his knife, and obligingly said, *as you have found the fox, it is fit you should kill him.*" Arnaud then divided the sac, which was very deeply situated, and so removed the stricture upon the bowel, and the patient made a quick recovery.

CASE OF

TRANSPOSITION OF THE THORACIC AND ABDOMINAL VISCERA,

Accompanied with an unusual Variety in the Venous System.

BY A. M. McWHINNIE, Esq.

Teacher of Practical Anatomy at St. Bartholomew's Hospital.

[For the Medical Gazette.]

THE subject was a female, about 25 years of age, concerning whose history no particulars could be ascertained. Death was found to have been caused by acute inflammation of the lungs. The body, which was loaded with fat, presented no peculiarity externally.

Attention was first drawn to the fact that there was misplacement of the viscera, from the complete absence of large intestine on the left side of the abdomen. On examining the right iliac fossa, the colon was found to ascend from a very large cæcum, which was rather more elevated than usual, the situation of its appendix vermiformis being reversed. The colon ascended in rather a tortuous course, into the right hypochondrium, whence, instead of crossing the epigastric region, it became folded suddenly upon itself, and descended close to the inner side of the ascending portion, to form a very extended sigmoid flexure. The large intestine being thus confined to the right side of the abdomen, was of about its usual length, and finally pursued its course along the middle line of the sacrum.

The stomach was situated very obliquely ; the larger extremity occupying the right hypochondrium, and the organ

was curved to such an extent that its two orifices were very nearly approximated; the cardiac opening being placed a little to the right of the pyloric.

The duodenum descended first, a little obliquely, towards the right of the vertebral column; then ascended in a line parallel to the other portion, and afterwards passed almost transversely to the left of the spine, so that the jejunum commenced almost in its usual situation. The small intestines were chiefly contained in the left iliac fossa. The superior mesenteric vein was placed in front of the two first and parallel portions of the duodenum, which separated it from the corresponding artery which was behind.

Liver of about the ordinary size; the larger lobe, with which the gall-bladder was connected, placed in the left hypochondrium. The spleen consisted of three distinct portions, connected with the larger extremity of the stomach in the right hypochondrium. Each received one or more large branches from the splenic artery, which divided very near to its origin.

Nothing very remarkable was presented in the appearance of the rest of the abdominal viscera.

Thorax.—The heart occupied rather more the middle line of the chest than ordinarily, the apex pointing to the right side. The situations of the large vessels were completely reversed.

The œsophagus descended to the left of the aorta; the thoracic duct, ascending also on the left of this vessel, formed a curve to terminate at the junction of the right subclavian and internal jugular veins.

The left lung had three lobes.

A remarkable feature in the case is the disposition of the vena cava inferior, which, after being formed by the union of the common iliac veins (in this instance as high as the first lumbar vertebræ), and, receiving the lumbar, renal, spermatic, and phrenic veins, entered the chest through the diaphragm, close to the left of the aortic opening. From this point it continued to ascend parallel with, and to the left of the aorta, and, arriving at a level with the arch of this vessel, curved forward over the left pulmonary vessels to join the vena cava superior.

The thoracic portion of the inferior cava resembled, therefore, the vena azygos; it received the intercostal,

bronchial, and œsophageal branches, and took the same course as this vessel when it exists.

The vena cava hepaticæ united to form a trunk, which entering the chest through the left of the tendinous centre of the diaphragm, terminated separately in the reversed right auricle.

The condition of the spleen is worthy of remark, as having been found imperfect in other instances of transposition of the viscera, and appears to be the only organ in which development has been arrested in these cases.

In the museum of St. Bartholomew's Hospital is preserved the preparation described by Mr. Abernethy in the 83d volume of the *Philosophical Transactions*, where there is a somewhat similar condition of the inferior cava in connexion with the reversed position of the heart. The inferior cava passing through the chest on the right of the aorta, and pursuing the course of the vena azygos, the place of which it supplied, it received also the vena portæ nearly on a level with the renal veins. The veins returning the blood from the liver passed through the central tendon of the diaphragm, and opened separately, as in the above case, into the anterior auricle.

Several instances are recorded, and particularly by Krause, in his *Handbuch der Menschlichen Anatomie*, of variety in the vena cava inferior, and supplying the place of the vena azygos, but apparently unconnected with any abnormal portion of the viscera.

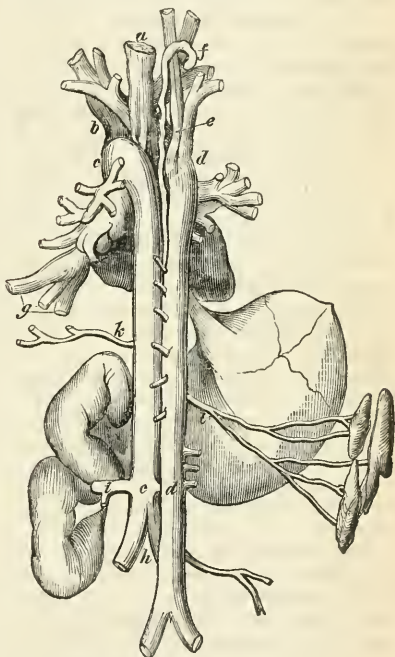
The accompanying sketch, presenting a posterior view, will explain more particularly the unusual arrangement of the vessels, which have been injected, and are preserved in the Anatomical Museum.

Numerous cases of irregular disposition of the viscera have been recorded in this Journal, and particularly in the interesting account communicated by Dr. Watson; many more, however, may be found in the works particularly of the continental writers. My friend, Mr. Curling, has favoured me with the particulars of an example of lateral transposition of the abdominal organs alone, and which he has kindly permitted me to add to the foregoing case—as serving, perhaps, to elucidate the obscure subject of these anomalies.

Henry Beard, aged 40, was received into the London Hospital, October 5,

1839, labouring under symptoms of disease of the heart, with general dropsy. He died October 12th; and on examination of the body, seventeen hours after death, the following appearances were found. The body was muscular and well formed, but generally anasarcaous. There were extensive pleuritic adhesions on the right side of the chest, and about sixteen ounces of serum. The left side contained full three quarts of straw-coloured serum. Both lungs were composed of the usual number of lobes. The heart was in its normal situation on the left side, but very large. The pericardium was somewhat thickened, and contained about two ounces of serum tinged with blood. The left ventricle of the heart was greatly hypertrophied, and there was induration at the base of the aortic valves, but no further disease. Nothing remarkable was observed in respect to the large vessels immediately connected with the heart, and the arrangement of the parts in the posterior mediastinum was quite regular. The cavity of the abdomen contained two quarts of serum, with masses of loose albuminous matter floating in it. All the abdominal viscera were transposed. The stomach was of large size, and situated on the right side of the abdomen; its cardiac orifice, with the great cul-de-sac, being on the right side, and the pyloric orifice on the left. Its direction was somewhat oblique, so as to facilitate the junction of the cardiac orifice with the œsophagus, which entered the abdomen nearly in the usual situation. The pancreatic duct, and ductus communis choledochus, united and opened into the duodenum on the left side. The liver was found on the left side, the gall-bladder being connected to the left and larger lobe. The spleen was rather small, and on the right side; and there were four supernumerary spleens near the principal one. The cæcum, with its appendix, was on the left side; it was not confined to the iliac fossa, but was entirely surrounded with the peritoneum, and quite free and loose. The colon ascended across and in front of the small intestines, towards the right lumbar region, where it made a remarkable turn towards the spine, and then passed across to the left side, between the tenth and eleventh dorsal vertebrae, behind the small intestines, and external to the peritoneal cavity; so that in this part of its course the colon

was uncovered by serous membrane. It afterwards made another turn on reaching the left side corresponding to the sigmoid flexure, and then joined the rectum. The kidneys were large, flabby, and granular, and the right was situated higher up in the abdomen than the left. The chief vessels of the abdomen were also laterally inverted. The arrangement of the iliac and renal arteries and veins corresponded with the position of the abdominal aorta on the right side, and the vena cava on the left. The apertures in the diaphragm for the vena cava and œsophagus were in their usual relative position, though a little nearer the centre than ordinarily.



- a, The œsophagus.
- b, Vena cava superior.
- c c, Vena cava inferior.
- d d, Aorta.
- e, Arteria innominata.
- f, Thoracic duct.
- g, Venæ cavæ hepaticæ.
- h, Common iliac veins.
- i, Left renal receiving the spermatic vein.
- k, Hepatic artery.
- l, Splenic artery.
- m, Inferior mesenteric artery.

CASE OF ARM PRESENTATION.

To the Editor of the Medical Gazette.

SIR,

I was requested to attend Mrs. G., in labour of her third child, on Monday forenoon. About half-past 11 o'clock, on examination per vaginam, I found the os uteri considerably dilated. The head was far up, occupying the anterior portion of the os uteri; the arm presented in the posterior. On withdrawing my fingers, a quantity of greenish matter adhered to them, of a very offensive odour. On Saturday night last she first felt the symptoms of labour; she describes the pains as being of a very peculiar character. On going to stool same night, a large cake of a greenish substance passed from the vagina. Since this time the pains have continued more or less, till this morning, when they all but disappeared. At the present stage of labour, from the os uteri not being entirely dilated, I deemed the best line of practice to be non-interference till the parts were fully dilated, and then to insinuate the arm above the head. With this intention I left the patient, giving strict injunction to send for me when the pains returned. From some mismanagement on the part of the attendants, I was not sent for in proper time; for although I arrived about three minutes after being called, the child was born; this was about two in the afternoon. The child had been dead for some time.

This being the first presentation of the kind I had met with, the line of practice that first flashed across my mind was turning; but, upon a more deliberate examination, I was of opinion that it was only necessary to allow the parts to become dilated, and then gently push the arm above the head. This method, of course, I was prevented from adopting, for the reasons above stated. In relating this case to my friend, Mr. J. Black, surgeon, Glasgow, he gave me the history of two cases of a similar nature: one occurred in his own practice, the other in a friend's. Mr. B. having attentively observed the process of nature in his own case, was enabled to state, in consultation with his friend, that turning was unnecessary, and that nature would accomplish the delivery without assist-

ance. The result verified this opinion. Both children were dead in these cases. It is worthy of remark, and ought to be borne in mind by the young accoucheur, that in the event of his not being able to discover what part is presenting with the extremity, he should be on his guard not to attach too much weight to the presence of the meconium, because he may be very easily deceived, the opinion of the present day, so far as I can learn, being this—that the presence of the meconium indicates that the breech is presenting. Suppose I had not been able to satisfy myself in the above case as to whether a hand or foot presented, and none of the other parts within reach, I might have very readily concluded from the presence of the meconium that the breech was presenting, and that the extremity was therefore a foot. The result, in all probability, would have been the conversion of a simple case into an arm presentation, absolutely demanding turning. When the child is dead in utero, every portion of its body loses that tonic force which is present during life; and I can very easily suppose that, independent of great pressure, or the nature of the presentation, the meconium might, from the sphincter ani participating in the general relaxation, be allowed to pass into the vagina; therefore we conceive that its presence ought not to be relied upon as an indication of breech presentation.

If the above case is suitable for your pages, its insertion will much oblige,

Your obedient servant,

JOHN F. KENNEDY.

South Shields, Feb. 19, 1840.

BLEEDING FROM LEECH-BITES.

To the Editor of the Medical Gazette.

SIR,

I SCARCELY know whether the contents of this note are worth publishing, but as I have found the method described accomplish its object remarkably well, it may possibly be of some service to mention it.

About three years ago, when on one occasion leeches were applied to the throat of a child, the bleeding was so profuse and so long continued as to endanger its life. Great difficulty was

experienced in checking the hæmorrhage, from the impossibility of bearing sufficient pressure around the neck. The ordinary means, including powdered nitrate of silver liberally used, were insufficient; it required the constant application of the finger for some time, nor did this tedious expedient succeed until the child had nearly bled to death. In thinking over this case, I determined, should an instance of the kind occur again, to transfix the puncture with a fine needle, and pass around it two or three turns of thread. About a month since, a case of a similar description presented itself. The child had been placed in bed after leeching, where it lay for some time, and the attendants were at last alarmed by finding the little patient deluged in blood. I elevated the punctured skin, and, holding it tightly between the fore-finger and thumb of the left hand, passed through, a little below the base of the bleeding orifice, a very fine sewing-needle, and then wound around it two or three turnings of thread. It appeared to give little pain, probably not more than the bite of the leech; the bleeding was immediately checked, and on removing the needle, three days afterwards, there was no return of hæmorrhage.—I am, sir,

Your obedient servant,

J. C. SPENDER.

Bath, March 17, 1840.

[It may be of use to remind our junior readers of the method of arresting the bleeding of leech-bites here practised, which, however, is nothing new.—ED. MED. GAZ.]

MR. ESTLIN'S SECOND CASE
OF
CYSTICERCUS CELLULOSÆ

Between the Conjunctiva and Sclerotica.

To the Editor of the Medical Gazette.

SIR,

IN a former number of your publication (MED. GAZ. for Aug. 25, 1838, p. 839,) I gave an account, accompanied by a drawing, of the hydatid *Cysticercus Cellulosæ*, which I unexpectedly discovered on puncturing a small tumor upon the sclerotica of a child's eye. A few

weeks ago another child was brought to the Dispensary for the cure of diseases of the eyes, with a tumor very similar in appearance to that before described: The patient was an infant of about 16 months old, named William Symonds; the tumor, semi-transparent, and about as large as a moderate sized English currant, was situated, as in the former case, at the inner canthus of the right eye, above the caruncle, between the tendinous expansions of the insertion of the attollens and abducens muscles. It could only be seen when the eye was directed obliquely outwards and downwards. The conjunctival portion of the membrane covering the tumor externally was very vascular, and much thickened, and the tumor itself was tense, and not very elastic: in order to puncture it, it required considerable pressure with the finger of the left hand to retain it in a situation where it was completely visible.

The exact resemblance of this little swelling to that which I described in your former volume, prepared me for expecting it to contain a similar parasite; and I consequently carefully watched it while making an opening into the sac. As soon as a puncture was made, some viscous, and rather purulent fluid, escaped, and the hydatid, in a collapsed state, slowly came out, looking like a very white or solid portion of membrane about one-tenth of an inch in diameter. On being put into water, the cyst expanded itself into a beautifully transparent membrane, strongly contrasted with the solid opaque head and neck. With a lens of an inch focal length, the four sucking discs surrounding that at the extremity of the head which contained the circle of hooks, were perfectly distinct. A very exact magnified representation of the head of this hydatid, in an uncompressed state, may be seen in the engraving illustrative of Mr. Curling's lectures on the Entozoa, in the MED. GAZETTE for Jan. 13, 1838, page 601, excepting that in my specimen the depression or aperture in the absorbing discs are larger, giving those protuberances a more cup-like form. Upon gently compressing the cysticercus between two pieces of glass, and viewing it as a transparent object by transmitted light with an achromatic microscope, the appearance was precisely that figured in the drawing accompanying my former paper, the small oval bodies

upon the head and neck, there described, being very apparent in the new specimen. Scarcely any mark remains upon the eye of the child from whom the hydatid was extracted.

I am induced to record this second case which has fallen under my notice with the view of calling the attention of surgeons, and particularly of those who have the care of ophthalmic institutions, to the vesicular tumors which are occasionally found upon the sclerotica, as I cannot but suppose that they oftener contain hydatids than is generally conjectured to be the case, though I have not heard of their being so situated in any other instances than in those I have detailed.—I am, sir,

Your obedient servant,

J. B. ESTLIN.

Bristol, March 19th, 1840.

P.S.—Since writing the above, I have read, in the *Gazette Medicale de Paris* (for Oct. 8th, 1839, p. 636, in a notice of the articles in the German medical periodicals,) a case where a cysticerous cellulosa was found by Dr. Hoering in a conjunctival tumor that had followed a contusion of the eye. Reference is made to two other German publications, where this parasite is described as having been found beneath the conjunctiva, but no particulars are given, and the circumstance is mentioned as one of rare occurrence.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abrégé.”—D'ALEMBERT.

The Theory of Horticulture; or an attempt to explain the principal Operations of Gardening upon Physiolo- gical Principles. By JOHN LINDLEY, Ph. D. F.R.S. Vice-Secretary to the Horticultural Society of London, and Professor of Botany in University College. 1 vol. 8vo. London, 1840.

A History of British Ferns. By EDWARD NEWMAN, F.L.S. 1 vol. 8vo. London, 1840.

THE admitted importance of every thing which bears upon the production of food, would justify us in noticing here the former of the works, the title of which is given above, even if the physiological interest of its contents did not demand a

careful investigation into its merits. The close connection between a defective supply of nourishment and the appearance of disease entitle every plan for the augmentation or improvement of the chief articles of diet to the consideration of the physician, as well as of the philanthropist and political economist. Dr. Parry conferred benefits on the human race by his contributions to the Transactions of the Agricultural Society of Bath, quite as important to their well-being, as by his elucidations of disease in the Elements of Pathology; and Dr. Lindley is no less a friend to mankind, in laying before the public a portion of his extensive knowledge of vegetable physics, as applied to the art of gardening. Those who may have no means of applying his judicious rules to practice in their own fields or gardens, may peruse, with much profit, this succinct, but lucid, exposition of the principles of horticulture. It is impossible to read the successive chapters of this work, without admiring the variety yet exactness of the knowledge brought to bear upon the subject; or failing to perceive how analogous many of the habits of vegetables are to those of animals. If all nature be a school, in which something is constantly to be learnt, the advantage of an able expositor of the phenomena must be obvious; and the individual who aims at improving the constitution of the human kind, may receive most valuable lessons from the habitudes of plants in crossings and hybrids. One instance will be sufficient:—Speaking of the late Mr. Knight's efforts to improve fruits, Dr. Lindley states, “he found that the most perfect and vigorous progeny was obtained, of plants as well as of animals, when the male and female parents were not closely related to each other.”

Disregarded as this law is in forming intermarriages, its truth cannot be too extensively enforced; and a most striking confirmation of it is to be found in the history of the families in which deaf and dumb children are born. In the greater number of cases it will be found, that the parents were related before marriage; such, at least, was the result of an inquiry into the parentage of the children in the Asylum for the Deaf and Dumb a few years ago.

But, desisting from special inferences to be drawn from the laws explained in

this work, we would revert to their connection with that subject of universal import—the increase of the quantity of food. If it be true, as maintained by the political economists, “that he is a benefactor to his race, who makes two blades of grass grow where only one grew before,” what must he be who makes ten? Now, a greater augmentation than this has been effected in some districts which were most unpromising at first. In the ninth report of the Glengkiln Society (see *Quarterly Journal of Agriculture*, for Dec. 1839) it is stated, “the proper succession of crops has been carefully studied; and, in the opinion of Mr. Dudgeon, since 1784, *by a mere change in the rotation*, the produce has, in many places, been increased ten-fold;” and more than even this may be hoped for from a similar cause—attention to vegetable physiology. We owe our best thanks to Dr. Lindley, for providing so valuable a manual to all those who wish to understand the subject.

We have left ourselves but little room to notice the other work on our list. This, however, is the less necessary, as the volume will recommend itself to all those who bestow even a casual glance upon it. It is an attempt on the part of Mr. Newman, not only to describe and delineate all the British ferns, but to reform their nomenclature. That in the first of these objects he has been most successful, needs no proof: difference of opinion will always exist, relative to the systematic part, and Mr. Newman is as well entitled to entertain his views as other classifiers. It is prefaced by some judicious observations and rules for the culture of ferns; and as it is only by long and close observation of the varieties of ferns, under cultivation, that the claims of some to be retained as species, or designated varieties, can be settled, these hints must be very valuable.

It is scarcely requisite to add, that the work is brought out in a style which commends it to persons of taste, as well as to the student; for, besides the actual subjects of the treatise, it is everywhere ornamented with vignettes and fragments of scenery, or buildings, where ferns display themselves,

And along with many “a flower,
Shew Flora’s triumph o’er the falling tower.”

MEDICAL GAZETTE.

Friday, March 28, 1840.

“Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
publicum sit, dicendi periculum non recuso.”
CICERO.

LONDON, ANCIENT AND MODERN.

IN an essay on the progress of London, one of the most interesting topics is the advancement of the healing art in its several branches. Dr. Bureaud-Riofrey, whose work we mentioned in our last article*, has dedicated some pages to this subject; but it deserves a volume. In early times the priest and the physician were one. He whose religious rank attracted the respect of the people was consulted in other cases where especial intellect or education was requisite; so that in primitive ages the same clear head which interpreted the decrees of heaven, and framed laws for the guidance of society, was supposed to suffice for the details of physic and architecture, and every art that demanded learning and ingenuity. As time wore on, a separation took place, and, contrary to the opinion of many medical declaimers, we even find the subdivisions of our profession among the ancients. Thus, in the third book of Herodotus, Cyrus sends to Amasis for the best *ἱηπρος ὀφθαλμων*, or eye-doctor, in Egypt: in Celsus we read not only of surgeons, such as Gorgias, Heron, and Meges, *chirurgorum eruditissimus*, but of Euelpides, a celebrated *ocularius medicus*: the Anthologia makes mention of Sosander, a horse-doctor; and in the Hippocratic oath the young physician promises that he will not cut for the stone, but will leave it to those skilled in the art. Still, there is no doubt that even in those bright periods, the union of these branches was, at least, as com-

* Londres, Ancien et Moderne, &c.

mon as the distinction ; and, in the dark ages which intervened between the fall of the Roman Empire and the revival of literature, it would have been vain to seek for a Meges or a Euelpides. It is probable that during this dim interval the number of lay practitioners was very small, and that the refinement of subdivisions was almost unknown till the council of Tours, in 1163, prohibited churchmen from performing bloody operations, and thus, in a manner, offered a premium for lay surgery. The separation between physic and divinity seems to have advanced pretty far in the 15th century. Menage, after observing that physicians were formerly ecclesiastics, informs us that, in 1452, the Cardinal d'Etouteville, during his nunciature in France, obtained permission for them to marry. The doctor of physic, too, described by Chaucer some twenty or thirty years afterwards, is clearly not a clergyman ; yet the separation was by no means complete in that century ; and the reader who has a moderate acquaintance with English history, and knows how constantly the highest dignitaries of the church held the office of Lord Chancellor, will not be surprised to learn that Linacre, the founder of the College of Physicians, was a priest. Nor will he be astonished that Henry VIII. practised physic, and drew up receipts for unguents, waters, and cataplasms. The fact is, that Henry was a complete scholar, according to the fashion of the age, armed against every disputant, and qualified to thunder forth theology against Luther, or Lambert, the school-master, one day, and discuss the *strictum* and the *laxum* with a medical professor the next.

A delightful point in the practice of the royal physician was, that he gave fees to his patients instead of receiving them. Thus, in his book of accounts, we find such entries as these :—

“ July 28, pd. to a poor child, the which the king's grace heled at Windsor, vijs. vjd.

Sept. 11, to two pooer folks that were heled of their sickness, xvsh.

Sept. 18, to two pooer folke that the king's grace heled, xvsh*.”

Dr. Bureaud-Riofrey, after observing that Mary and Elizabeth proposed remedies against the plague, adds, that the latter was so jealous of all the prerogatives of the crown, that she caused persons affected with scrofula to be presented to her, whom she cured, as her courtiers said, by the touch of her royal hand.

This touching for the king's evil, however, was not peculiar to Elizabeth, but was practised, we believe, by every English sovereign from Edward the Confessor to Queen Anne ; the last had the honour of touching Dr. Johnson. Nor do we think that Elizabeth *caused* the patients to be presented to her ; the parents were too happy to bring them.

The medical condition of England about this time must have been bad enough. For just as there was an interval between the abolition of the monasteries and the passing of the 43d of Elizabeth,—during which the poor were driven into irrepressible rebellion, through the want of the relief previously afforded by the convents,—so there seems to have been a similar interregnum between the decline of the old system of clerical medicine, and the establishment of the medical polity of the last 150 years.

It must be allowed, indeed, though the declaration seems a paradox, that in uncultivated ages, although there is more death, there is less disease. Human life is shorter ; plague, dysentery, and sweating-sickness, depopulate whole provinces, but the slight ailments, which make up the bulk of medical practice, are less frequent, and less regarded. In former times, the well-housed, well-

* Life of Linacre, by Dr. J. N. Johnson.

fed classes, who are able to lie by, as the phrase is, on every slight attack of disease, bore a far smaller ratio to the mass of the community; and the artisan, yeoman, or petty dealer, overlooked slight maladies, or trusted to domestic remedies. But when these did not suffice, what practitioners could London consult in the 16th and 17th centuries? The only legal advice (excepting in surgical and obstetrical cases) was that of members of the College of Physicians. Their fee of £1, was of itself a prohibition to all but the rich; and physicians were so few in number, that they could scarcely have sufficed for the service of the Court, the Parliament, and a handful of opulent citizens. Thus, we learn that, on one occasion, in the reign of Queen Mary, the *comitia* of the College could not be held at the appointed time, as the Fellows were all occupied with attending cases of epidemic ague.

It is clear that the necessities of the nation could not allow such a state of things to last; and, accordingly, in spite of censures and prosecutions, surgeons, apothecaries, midwives, herbalists, farriers, and astrologers, broke in upon the golden monopoly. The clergy, of course, practised to a considerable extent; and the Lady Bountifuls brought their plague-water and surfeit-water into the national stock of physic. One generally pictures a Lady Bountiful, if not absolutely withered, at least no longer in her prime youth; but the old romances, apparently founded on nature, represent young women as practising physic and surgery. The instance of Angelica who stanches the wound of Medoro with some vulnerary herb, (the poet does not know whether it was *dittamo* [dictamnus] or *panacea*) will occur to our readers*.

In such an instance as this we may well say, with Dr. Bureaud-Riofrey,

“On guérissait des maladies par invocation, à l’aide de charmes.”

With the progress of medicine and of society, female practice has much declined, though no less a man than Dr. Gooch wished to see it revived.

On the whole it is difficult to avoid coming to the conclusion that, until the beginning of the 17th century, or even a later period, considerable towns must have been as ill provided with medical counsel as the small villages of the present day.

After Roger Bacon, the next English physician mentioned is Gilbert, of whom he says that he lived in the 15th century. This is obviously a mistake, as John a Gaddesden, his pupil, was physician to Edward II., and therefore lived in the beginning of the 14th. Dr. Bureaud-Riofrey makes very merry with John a Gaddesden’s famous treatise, the *Rosa Anglicana*. His method of curing small-pox by wrapping up the patient in scarlet cloth; the powder of a roasted frog hung round the neck to stop hæmorrhage; and crow’s eggs as a remedy for epilepsy, are unquestionably points more curious than commendable. Yet we have little doubt that the student who had the courage to wade through *Rosa Anglicana*, would find matter of a better kind. The reader who has been taught to think that every thing worth knowing in physic has been discovered within the last forty or fifty years, will often be surprised, on taking up some old treatise, to find how much was known in the dark or twilight ages*.

The Doctor goes so far as to say that

* In the *Practica Usualis*, a black-letter repository of antique practice, we find mention of the *cacia* pills, so often talked of by the lower orders. The following is the passage (we spare our readers the abbreviations):—“*Digesta materia purgetur cum pillulis cochiis, cum quibus quasi omnes conveniunt.*”

We will take this opportunity of observing, that the treatment of erysipelas by scarification, the invention of which was contested some years ago by Mr. Copland Hutchison and Mr. Lawrence, is to be found in Freind:—

“In inflammatory cases, and in erysipelas particularly, it is often seen by experience that

medicine was in the hands of empirics and women until the time of Henry the Eighth. This is, perhaps, too broadly stated; but he goes still farther when he adds, a few lines afterwards, "*dans un état de choses aussi affligeant pendant le XIV^e. XV^e. XVI^e. et XVII^e. siècles,*" &c. In the sixteenth and seventeenth centuries, illuminated by Linaere and Caius, by Harvey and Sydenham, the signs of progress were cheering, though the medical condition of the country was still bad. It is true that too large a portion of the population lacked regular advice; but the practice of physic was making rapid strides: the people were not wholly in the hands of empirics and women, and though the surgeons and apothecaries of those ages might not be all that could be desired, they did not cure "*par invocation, à l'aide de charmes.*"

Apothecary practice in a quiet way, founded principally on the treasured prescriptions of physicians, must have begun at an early period. We read, that when Harvey fell into disrepute as a practical man, through his physiological researches, there were apothecaries who would not give threepence for one of his bills; the bills or prescriptions of the physician being hoarded to form a practical system of medicine for the apothecary. The same method is probably pursued by the druggists of the present day. It is needless to trace the gradual rise of the apothecary, until, by the decision of the House of Lords, in 1721, he was made the physician of the middle classes, and an aching void in the fabric of English society was reputably filled up.

The barber-surgeon of the middle ages gradually abandoned the servile

scarifying upon the part, when the membranes are loaded and thickened, will remove the inflammation in a very sudden and surprising manner."—Hist. of Physic, by J. Freind, M.D. vol. i. p. 76.

The revival of the practice is undoubtedly due to Mr. Copland Hutchison.

part of his double occupation; and, throwing off his allegiance to the physician, became, like the apothecary, his formidable enemy. The reason for these successful rebellions we have already given in the present essay, as well on former occasions. How could physicians expect to retain the monopoly of practice, when their fee was equal to half a year's rent of a large mansion?

The progressive cheapness of advice has also been accompanied by a corresponding cheapness of medicine; so that medical treatment is now brought within the reach of a greater proportion of the community than at any former period. Let us hope that this is an illustration of the axiom that it is the effect of civilization to make good things cheap.

In consequence of the bad ventilation and drainage of ancient London, and the unwholesome modes of life of its inhabitants—perhaps also from the lack of good medical advice—the deaths were more numerous than the births; so that the population was kept up and increased by immigrants. Graunt tells us how rapidly any depopulation was repaired, in a passage which looks as if he thought more of money than of men:—"I say it followeth, that let the mortality be what it will, the city repairs its loss of inhabitants within two years; which observation lessens the objection made against the value of houses in London, as if they were liable to great prejudice through the loss of inhabitants by the plague*."

Dr. Bureaud-Riofrey has fallen into a singular inconsistency on the subject of population in England; for, at page 38, he says that in 1558 intermittent fevers were so common and so destructive, that hands could not be found to gather in the harvest; while, at page 90, he tells us that in 1558 the popula-

* Observations on the Bills of Mortality, p. 36, edit. 1661.

tion was so great, and its increase caused so much apprehension, that the poor were not allowed to marry before thirty.

The progress of urban improvement in London, from the first bridge built over the river to the days of gas-lighting and the Thames Tunnel, deserves its historian, but cannot be treated of at the end of an article.

ON THE NERVES OF THE GRAVID UTERUS.

BY ROBERT LEE, M.D. F.R.S.

[Abstract of a paper read at the Royal Society.]

THE author, while dissecting a gravid uterus of seven months, on the 8th of April, 1838, observed the trunk of a large nerve proceeding upwards from the cervix to the body of that organ along with the right uterine vein, and sending off branches to the posterior surface of the uterus; some of which accompanied the vein, and others appeared to be inserted into the peritoneum. A broad band, resembling a plexus of nerves, was seen extending across the posterior surface of the uterus, and covering the nerve about midway from the fundus to the cervix. On the left side, a large plexus of nerves was seen, surrounding the uterine veins at the place where they were about to enter the hypogastric vein. From this plexus three large trunks of nerves were seen accompanying the uterine vein, which increased in size as they ascended to the fundus uteri. From the nerve situated on the posterior surface of the vein, numerous filaments passed off towards the mesial line, as on the right side; some following the smaller veins on the posterior surface of the uterus, and others becoming intimately adherent to the peritoneum. The largest of the nerves which accompanied the uterine vein was traced as high as the part where the Fallopian tube enters the uterus; and there it divided into numerous filaments which plunged deep into the muscular coat of the uterus along with the vein. A large fasciculated band, like a plexus of nerves, was also seen on the left side under the peritoneum, crossing the body of the uterus; and several branches, apparently nervous, proceeding from this band, were distinctly continuous with some of the smaller branches of nerves accompanying the uterine veins. The preparation of the parts was placed in the Museum of St. George's Hospital, on the 1st of October,

1838; and several anatomists who examined it were of opinion that they were absorbents accompanying the uterine veins, and tendinous fibres spread across the posterior surface.

Dr. Lee availed himself of another opportunity which presented itself on the 18th Dec. of the same year, of examining a gravid uterus in the sixth month of pregnancy, which had the spermatic, hypogastric, and sacral nerves remaining connected with it; and during the last ten months, he has been diligently occupied in tracing the nerves of this uterus. He believes that he has ascertained that the principal trunks of the hypogastric nerves accompany, not the arteries of the uterus, as all anatomists have presented, but the veins; that these nerves become greatly enlarged during pregnancy; and that their branches are actually incorporated, or coalesce with the branches of the four great fasciculated bands on the anterior and posterior surface of the uterus, bearing a striking resemblance to ganglionic plexuses of nerves, and sending numerous branches to the muscular coat of the uterus.

The author gives the following description of the nerves of the gravid uterus in the sixth month, and of these fasciculated bands as displayed in the dissection.

Behind the uterus, the aortic plexus divides into two portions, to form the right and left hypogastric plexuses. These plexuses, after an intimate union with the nerves accompanying the ureters, descend to the neck of the uterus, upper part of the vagina, and contiguous parts of the bladder and rectum, where they are joined by branches from the third and fourth sacral nerves. The left hypogastric plexus, about two inches below the aortic plexus, sends off a large branch, which passes on the inside of the ureter to the superior uterine vein, where it is about to terminate in the hypogastric vein. Here the nerve suddenly expands, becomes broad and thin, and passes into a great plexus of nerves, which completely encircles the vein. This plexus, surrounding the uterine vein, is joined below by two large branches, which proceed from the hypogastric plexus, nearer the vagina, and lower down, and from which branches pass on the outside of the ureter. From the upper part of this plexus, surrounding the uterine vein near its termination, three large trunks of nerves proceed upwards with the vein to the superior part of the uterus, and enlarge as they ascend. The posterior branch of these hypogastric nerves sends off in its course smaller branches, which accompany the ramifications of the uterine vein on the posterior surface of the uterus. Passing upwards beyond the junction of the

spermatic with the uterine vein, and running between the peritoneum and the left posterior fasciculated band, it spreads out into a web of thin broad branches and slender nervous filaments, some of which are inserted into the peritoneum, and others follow the vein to the fundus uteri, which they completely surround as the vein passes down into the muscular coat of the uterus.

Some of the branches of this nerve, near the fundus uteri, are distributed to the muscular coat, but these are small and few in number.

The middle and anterior branches of the hypogastric nerves adhere closely to the uterine vein as they ascend, and form around it several plexuses, which completely invest the vessel. From these plexuses branches are sent off to the anterior surface of the uterus, some of which, in an arborescent form, follow the trunk and branches of the uterine artery. These two hypogastric nerves ascend, and closely unite with the left posterior fasciculated band.

On the left side of the uterus this band arises near the mesial line, on the back of the uterus, midway between the fundus and cervix, from a mass of fibres, which adhere so firmly both to the perineum and muscular coat, that it is difficult precisely to determine their arrangement. From these fibres the band proceeds across the uterus, in the form of a thin web, to the point where the spermatic vein is leaving the uterus. After closely uniting with the hypogastric nerves, this band proceeds outwards to the round ligament, becoming less firmly adherent to the peritoneum, where it unites with the left anterior band and spreads out into a great web, under the peritoneum. The left posterior band it loosely attached, through its whole course, to the subjacent muscular coat by soft cellular membrane.

The spermatic nerves on the left side pass down to the ovarium with the spermatic artery, and first give off several branches to the corpus fimbriatum. A few small branches are then sent into the outer end of the ovary. The spermatic nerves afterwards leave the artery, and proceed with the veins to the uterus, where they firmly unite to the outer extremity of the left posterior band; and after the junction of this band with the prolongations of the anterior band under the round ligament, numerous small delicate filaments, apparently nervous, are sent to the base of the ovarium.

On the right side of the uterus, the author finds that the distribution of the hypogastric and spermatic nerves does not essentially differ from that now described as seen on the left side. The form and

situation of the right posterior band is, he states, much more clearly seen than on the left side, and presents the appearance of a white pearly fasciculated membrane about a quarter of an inch in breadth, proceeding from the mesial line at right angles to the hypogastric nerves, across the body of the uterus, to the round ligament, where it unites with the anterior band. Numerous branches, strikingly resembling the branches of nerves, are sent off from the upper and lower edges of this band, and from its posterior surface to the muscular coat of the uterus. An extensive and intimate union at various points is distinctly perceptible between these branches sent off from the band and the branches of the hypogastric nerves. On the anterior and upper part of the neck of the uterus, there is a great mass of reddish-coloured fibres, firmly interlaced together, resembling a ganglion of nerves, into which numerous large branches of the hypogastric nerves on both sides enter, and to which they firmly adhere. From the upper part of this fibrous substance there passes up, over the whole anterior surface of the uterus, a thin band of firm white fasciculated fibres, prolongations of which extend to the round ligaments,—into which, and into the posterior band, they are continued by numerous filaments, like those of nerves. From the posterior surface of this great band, numerous branches, also apparently nervous, can be traced to a considerable depth through the muscular coat of the uterus.

The author concludes his paper with the following remark, and a short historical account of the progress of discovery on the subject of the nerves of the uterus:—

“From the form, colour, and general appearance of these fasciculated bands, and the resemblance they bear to ganglionic plexuses of nerves, and from their branches actually coalescing with the hypogastric and spermatic nerves, I was induced to conclude, on first discovering them, that they were nervous plexuses, and constituted the special nervous system of the uterus. The recent examination, however, of the gravid uterus of some of the lower animals, in which I have found a structure similar to those bands in large quantity under the peritoneum, has left me in considerable doubt as to the nature of these bands, and until further investigations have been made, I shall not venture to pronounce a positive opinion respecting them.”

The description of the nerves of the uterus contained in Professor Tiedemann's splendid work, the author adds, is usually referred to by anatomical writers as the most accurate and complete which has ever been given. Professor Tiedemann has represented the spermatic nerves as

being distributed chiefly to the ovarium; and the hypogastric as invariably accompanying the trunk and branches of the uterine arteries, along the sides of the uterus, -- dividing into smaller branches, and quickly disappearing in the muscular coat of the uterus. He has made no mention of the large nervous trunks on both sides of the uterus, which accompany the uterine veins; nor has he noticed fasciculated transverse bands on the anterior and posterior surfaces of the uterus, connected with the hypogastric and spermatic nerves.

MEDICO-CHEMICAL HISTORY OF MILK.

By DR. BIRD.

(From Sir A. Cooper's Work on the Mamma.)

MILK is a white opaque fluid, possessing a bland, sweetish taste, secreted by certain glands in Mammalia, and designed for the nourishment of their offspring.

The specific gravity of cow's milk, which may be assumed as the type of the different varieties of this secretion, is about 1.030. This, it is obvious, is far from being constant, as it must necessarily vary with the amount of solid matters present, and which depend upon the health, vigour, age and nourishment of the animal, as well as on the time that has elapsed since parturition, and other causes.

Under the microscope, myriads of extremely minute globules are seen floating in milk; these, on account of their extreme minuteness, appear black at their edges, and with a magnifying power of 100, the largest of them does not exceed in diameter, according to Raspail, .00039 inches. On the addition of a drop of solution of potass, the globules are seen to vanish, and a limpid fluid is left.

As the opacity of milk depends on its holding in diffusion myriads of opaque globules, Sir A. Cooper has by straining it repeatedly through a filter sufficiently fine, separated the opaque particles. On submitting this to the test of experiment, I have also found it to succeed most perfectly, a nearly limpid fluid resulting after the milk had been repeatedly filtered.

The simplest mode of regarding milk is that of an emulsion, formed by the intimate mixture of a fatty matter termed *butter*, with an albuminous constituent, called in chemical language, *casein*. The intimacy of the mixture is doubtless increased by the presence of sugar of milk, as saccharine substances are well known to possess the property of forming imperfect emulsions with oils.

Cow's milk contains on an average about 10 or 11 per cent. of solid matter, made up of organic and saline constituents.

When milk is permitted to repose for a few hours a large proportion of its oily constituents, mixed with some of its caseous matter, slowly separates from the mass of fluid, and being of lower specific gravity than the latter, rises and forms an opaque layer on its surface. This lighter portion is termed *cream*, and the milk from which it is thus separated is popularly termed *skimmed milk*, because the cream is skimmed off, for the purpose of being converted into butter. The specific gravity of the cream is on an average 1.0244, and that of skimmed milk 1.0348, the greater gravity of the latter affording a sufficient explanation of the phenomenon of the cream floating on its surface.

If the milk from which the cream has been thus separated, be left to itself, it sooner or later undergoes a spontaneous change, some free lactic acid becoming developed, and the albuminous constituent, *casein*, separates in large white coagula. The development of lactic acid, in all probability, arising from the reaction of caseous matter on the saccholactin, or sugar of milk, as lately pointed out by M. Fremy. This always takes place with greater rapidity in warm than in cold weather, and is hastened during an electric state of the atmosphere, as during a tempest. The addition of a small quantity of any free acid, or of the well-known *rennet*, greatly facilitates this change and consequently coagulation of the caseous matter. The serous fluid from which the *casein* or curd has been thus separated, is popularly termed *whey*.

When whey is submitted to evaporation so as to free it from a large proportion of water, it on cooling crystallizes in small brownish grains; constituting sugar of milk. In Switzerland a very large quantity of this sugar is procured from the whey left after separating the curd in the process of cheese making, and is used by the peasants for all the purposes to which cane sugar is applied in this country.

Sugar of milk consists of—

Carbon	45.94
Hydrogen	6.00
Oxygen	48.06
	<hr/> 100.00

It is generally stated to be incapable of undergoing the vinous fermentation, although an alcoholic fluid termed *koumiss*, has been long prepared by the Tartars from mare's milk. It is now, however, placed by the researches of Hess, (POGGENDORFF, *Annalen*. 21., 194,) beyond a doubt, that

sugar of milk is capable of being converted into alcohol by fermentation, although not with so much readiness as cane or grape-sugar.

A layer of cream formed on the surface of milk by repose is by no means homogeneous, for on carefully examining it, two distinct portions, not, however, separated by any very evident line of demarcation, may be made out; of these the uppermost is richest in butter, and the lowest in caseous matter. The average proportion of cream separated from milk by repose is about one-eighth, but this varies considerably.

When cream is submitted to mechanical agitation, as in a churn, it separates into two portions, the one being a soft fatty substance of an agreeable odour, constituting the well-known butter; the other is a more serous fluid, holding some casein, some sugar, and saline matters in solution, and termed butter-milk, the *petit-lait* of the French. Butter generally contains about one-sixth of its weight of caseous and other matters mechanically mixed with it; these by careful fusion become separated, and then the butter may be kept for a long time without becoming rancid.

After butter has been carefully fused, filtered through paper whilst melted, and well washed with water, it is nearly pure; in this state, 100 parts of hot alcohol dissolve 3·46 parts of it. Butter thus purified, contains, like all other fats, *oleine* and *stearine*, with the addition of a third fatty ingredient peculiar to butter, and hence named *butyrine*.

Anything like a quantitative analysis of milk can, it is obvious, be considered in no other light than that of affording an approximation to the average proportion of its principal ingredients. The following are the results of the analysis of Berzelius.

1000 parts of *skimmed milk*, of specific gravity 1·033, contained—

Water	928·75
Caseous matter with traces of butter	28·00
Sugar of milk (saccholactin)...	35·00
Lactic (acetic) acid, acetate of potass, and traces of a salt of iron	6·00
Hydrochlorate and phosphate of potass.	1·95
Phosphate of iron	0·05
1000 parts of <i>cream</i> , of specific gravity 1·024, consisted of	
Butter	45
Caseous matter	35
Sugar of milk and saline ingredients	44
Water (<i>butter milk</i> ?)	876

By incineration, caseous matter leaves above 6·5 per cent of ashes, consisting chiefly of phosphate of lime.

The caseous matter, or casein of milk, constitutes the basis of cheese: it may be considered as bearing the same relation to milk, that the albumen does to blood.

It is, indeed more than probable, that casein is but a modification of ordinary albumen, and hence may, in a physiological sense, be considered as the albuminous principle of milk. Casein is precipitated from its solutions as in milk, by the addition of acids, which indeed appear to combine with it, for by separating them by a very simple chemical process from the coagula, the casein once more becomes soluble in water. A familiar example of the coagulation of casein by an acid is met with, in the vomiting of curdled milk by suckling infants; the coagulating agent in these cases, is probably hydrochloric acid, which from the researches of Dr. Prout and Leopold Gmelin, appears to be constantly present in the stomach. The rationale of the disappearance of this disagreeable symptom, on the administration of a few grains of chalk or magnesia, is hence sufficiently obvious.

Casein, when rendered as pure as possible, consists, according to the analyses of Gay Lussac and Thenard, and Berard, of—

	Carbon.	Oxygen.	Hydrogen.	Nitrogen.
Gay-Lussac and Thenard	59·78	11·41	7·43	21·38
Berard.....	60·07	11·41	699	21·51

Damp casein, when set aside in a warm place, rapidly undergoes putrefactive fermentation, and a complex mass results, consisting, according to Prout, of two substances, termed caseic acid and caseous oxide, or according to Braconnot, chiefly of a matter termed aposepodine.

Milk drawn shortly after parturition, differs in its physical and chemical character from milk drawn at a more distant period. This variety is termed *colostrum*; that of the cow is yellow, mucilaginous, and occasionally mixed with blood; it

contains but mere traces of butter or other fat, and appears to contain albumen as one of its ingredients, as by exposure to heat, it completely solidifies, like so much serum of blood. The specific gravity of the *colostrum* of the cow is about 1·072. This secretion does not turn sour like milk, but readily putrefies; and in three or four days after the birth of the calf, is replaced by the ordinary lactal secretion.

The *colostrum* of the cow, ass, and goat, has been submitted to examination very lately by MM. Chevalier and Henry.

They state the property possessed by this secretion of undergoing coagulation by heat, although they have not mentioned albumen among its ingredients. It is probable that it was confounded with the mucous matter, stated by these gentlemen to be present in the fluid. The following is the result of their analysis of the colostrum of the cow :—

Casein	15.07
Mucous matter.....	2.00
Saccholactin or sugar of milk	?
Butter	2.60
Water	80.33
	<hr/>
	100.00

On taking a retrospective glance at the above remarks on the composition of cow's milk, which I have taken as a standard or type of this class of secretions, we cannot help being struck with the peculiar manner in which the different component parts appear to be arranged, for the more ready nourishment of the new-born animal. Milk may be physiologically regarded as made up of three classes of ingredients, the first containing those which resemble vegetable secretions in the absence of nitrogen; the second including those which contain abundance of nitrogen, and consequently afford a proper pabulum for the growth of the young animal; the third class containing those ingredients which in the present state of chemical physiology we have no safe grounds for supposing are *digested*, or their elements rearranged by vital chemistry, and hence differ from the first two classes in being rather *appropriated* by the vital influence of the infant animal, than assimilated to form such combinations.

- A. *Ingredients of milk in which nitrogen is absent.* Sugar of milk, fatty matters.
- B. *Ingredients of milk in which nitrogen is present.* Caseous matter.
- C. *Inorganic, or saline ingredients.* Salts of potass, soda, lime, and iron.

The latter class contains those earthy salts which constitute the chief ingredients in osseous structures; and all being dissolved in, or diffused through, abundance of water, become fitted to pass or drain through the minutest vascular tissues.

A CASE OF TWINS,

WHERE ONE HAD BEEN LONG DEAD.

By Dr. C. Th. v. SIEBOLD, of Dantzic.

AN unmarried woman, aged 25, pregnant for the second time, was delivered of a stout boy at the full time, at 8 in the evening of Sept. 5, 1837. At the edge of the placenta there was a thickened flap of

skin about an inch and a half long, and three-quarters of an inch broad, which was connected with the membranes of the ovum; there were no blood-vessels to be seen in this appendage, nor did it seem to be of a fatty nature. As Dr. Siebold did not know what to make of it, and this irregularity of the membranes of the ovum did not seem worth preserving, the afterbirth was put aside. The afterpains continued until 10 o'clock in the morning of the third day, when something protruded from the genitals, having the appearance of a longish oval flap of the skin, of a pale colour, but with no perceptible smell of putrefaction; it was $3\frac{1}{4}$ inches long, and $1\frac{1}{4}$ broad. On more accurate examination Dr. Siebold found that it was a fœtus of about four months, squeezed quite flat. Its head was pressed together laterally, with the face turned to the left. The remains of the eyeballs gleamed with a blueish hue through the closed eyelids. The neck and trunk were flattened from before backwards; the ribs and their cartilages were easily distinguished, and not one of the former was broken. The right arm was bent obliquely over the chest, and pressed close to it. The right hand was perfectly formed. The left humerus was extended upwards behind the left side of the face, but the fore arm was lost. The right leg was turned upwards, so that feet and toes could be pretty clearly distinguished; but of the left lower extremity only the femur was left, with the muscles surrounding it. The external male genitals were also distinguishable. On the abdomen there was a remnant of the funis in the form of a flat and narrow ligament three inches and a half long, with the maternal extremity unattached and lacerated. The whole back of the body was as it were corroded, so that in many places the bones of the fœtus were laid bare.

It was beyond all doubt that this fœtus was the twin brother of the child which had been born alive, and that both germs had been impregnated at the same time. One of the embryos died in the fourth month of its formation, and was gradually compressed against the internal surface of the uterus. The peculiar flap on the membranes of the child born at its full time may possibly have been the relics of the membranes belonging to the ovum of the fœtus which perished. Dr. Siebold is very sorry that he did not make a preparation of it. He doubts this being a case of superfœtation, indeed he doubts the possibility of its occurrence; and is inclined to believe that in most of those instances which are supposed to prove a superfœtation, either there were twins, and one fœtus came into the world too soon, or too late; or else the case has been narrated so imperfectly as to prove nothing on either

side of the question. So far Dr. Siebold. Dr. Meissner, who reports the case in *Schmidt's Jahrbücher*, observes that even when both children are born alive and of apparently different ages, it is not a proof of superfœtation. He once saw a case where of two children born at the same time one was at the full period, and the other, though born alive, was apparently a seven months child, and weighed only two pounds and a half; yet both had a common placenta and a common chorion, but the amnion was double. This case proves that from some circumstance a twin child may be retarded in its growth. Immediately after this case we find one of the same class where triplets were borne. On the 1st April 1838, says G. A. Michaelis, M. P. was prematurely delivered of two boys, both dead; on the 16th of July she was delivered of the third child of the triplet, who was alive and well when the case was reported in *Pfaff's Mittheil*, 1838, Hft. 9 and 10.

SPONTANEOUS DISCHARGE OF A CALCULUS,

OCCURRING TWICE IN THE SAME PATIENT.

At the meeting of the Wurtemberg Medical Association, held at Tübingen, May 14th, 1838, Dr. Koller, of Hechingen, related the following interesting case.

A boy aged $4\frac{1}{2}$, the son of poor country people in the village of Füngingen, had long suffered from scrofula and rickets, and during this period often scratched the lime from the walls, and swallowed it with greediness, but had never had medical advice. In the spring of 1828 he first laboured under slight urinary disorder, which from time to time disappeared and returned. Dr. Koller was called in, and after a gentle laxative, ordered hemp-seed milk to be taken as a drink, a prescription which was followed for a long time. But by the beginning of July, the symptoms had become so severe, that Dr. Koller was again consulted; and on examining with the catheter he found a stone, and proposed to the parents to operate. They would not consent, however, though fever began to set in, and though the child complained of the increased severity of the pain, while the scrotum swelled, inflamed, and ultimately mortified, so that small openings formed in several places, through which urine and matter trickled forth. As it was now necessary to give up the operation Dr. Koller prescribed the mineral acids and bark internally, and tonic and aromatic poultices externally. On the following day, on which several sloughs had been already thrown off, exactly at the time of Dr. Koller's visit, the patient felt a violent inclination to evacuate the

bowels and bladder, and on sitting upon the chamber-pot squeezed out a calculus weighing 129 grains. The urine now flowed without obstruction through the passage by which the stone had been discharged. The previous remedies being continued, all the sloughs were soon thrown off, and within a fortnight the destroyed parts were regenerated, so that only a few drops of urine trickled from the wound, while a full stream was discharged from the urethra. In three weeks the child was quite well, had a more healthy appearance, and continued to grow. From this period, Dr. Koller only saw the patient occasionally and rarely. Meantime the boy had attained the age of 15, and had gone to service, when in Feb. 1838, after an interval of ten years, he was attacked with difficulty in making water, and pain, so that he was obliged to leave his situation. This time Dr. Koller was not called in, but a barber of the place. The case went on, as on the former occasion. The scrotum inflamed and mortified, and in a few weeks a calculus weighing 90 grains was discharged just like the former one, except that its passage was facilitated by an incision into the mortified part of the skin of the scrotum. The wound healed like the previous one, and with the same rapidity. — *Wurtemberg. Correspond. Bl.* and *Schmidt's Jahrbücher*.

APPLICATION OF IODINE EXTERNALLY.

To the Editor of the Medical Gazette.

SIR,

In last week's GAZETTE a correspondent, who signs himself ΘΕΡΑΠΕΙΑ, directs the attention of its readers to the use of iodine as an external application in chilblains, informing them at the same time that he is not aware that the remedy had ever before been either employed or recommended for that complaint. In the latter respect your correspondent is in error in supposing that he is the first to suggest such an application for chilblains. If ΘΕΡΑΠΕΙΑ will do me the honour of referring to a little work published by me about nine months ago, entitled "Selections in Pathology and Surgery," he will there find that I have been in the habit, for more than ten years, of using iodine externally, both in the form of tincture and of ioduretted hydriodate solution; and he will perceive, by turning to page 119, that chilblains is one of the diseases especially chosen with the view of illustrating the employment of the remedy.—I am sir,

Your obedient servant,

JOHN DAVIES,

Surgeon to the General Infirmary.

Hertford, March, 23, 1840.

OF

DRUGS ON SALE IN THE ENGLISH MARKET,

With their Prices and several Duties.

(From the Official Returns, March 24, 1840.)

	PRICE.		DUTY.		DUTY PAID.		
	£	s. d.	£	s. d.	In 1839 to last week.	Same time last year.	
Aloes, Barbadoes, D.P. c	15	0 0	to 30	0 0	{ B.P. lb 0 2 } F. lb 0 8 }	21,357	31,662
Hepatic (dry) BD. c	5	0 0	10	0 0			
Cape, BD. c	1	15 0	3	10 0			
Anise, Oil of, German, D.P. lb					F. lb 1 4	322	711
E. I. lb	0	5 0	0	5 6	E. I. 1 4	337	
Asafoetida, B.D. c	1	10 0	3	10 0	c 6 0	35	15
Balsam, Canada, D.P. lb	0	1 0	0	1 1	lb 0 1	2,515	1,619
Copaiba, BD. lb	0	1 3	0	1 10	c 4 0	219	131
Peru, BD. lb	0	4 6			lb 1 0	123	251
Benzoin (best) BD. c	25	0 0	50	0 0	c 4 0	7	44
Camphor, unrefined, BD. c	30	0 0			c 1 0	147	120
Cantharides, D.P. lb	6	4 0	0	4 0	lb 1 0	5,040	5,520
Caraway, Oil of, D.P. lb	0	9 0			lb 4 0	733	190
Cascarilla or Eleutheria Bark, D.P. c	3	10 0			lb 0 1	807	
Cassia, Oil of, BD. lb	0	8 6			lb 1 4	774	1,145
Castor Oil, East India, BD. lb	0	0 4	0	0 10	c 1 3	{ 1,902	983
West I. (bottle) D.P. 1½ lb							
Castoreum, American lb	0	17 0	0	18 0	{ lb 0 6	298	396
D.P. Hudson's Bay lb	0	18 0	1	0 0			
Russian lb		none					
Catechu, BD. Pale c	1	1 6			{ c 1 0	21,882	7,930
Dark c	1	8 0					
Cinchona Bark, Pale (Crown) lb	0	2 0	0	3 6	{ lb 0 1	12,780	22,278
BD. Red lb	0	2 0	0	4 0			
Yellow lb	0	4 0	0	4 4			
Colocynth, Turkey lb	0	1 6	0	2 9	lb 0 2	1,760	3,530
D.P. Mogadore lb	0	1 0			lb 0 2	5,697	6,112
Calumba Root, BD. c	0	12 0	1	15 0	lb 0 6	15,321	10,717
Cubebs, BD. c	2	10 0			c 4 0	14	19
Gamboge, BD. c	5	0 0	15	0 0	c 4 0	148	196
Gentian, D.P. c	1	6 0	1	8 0	c 6 0	1	2
Guaiacum, D.P. lb	0	1 0	0	3 0	{ c 6 0	2,455	2,310
Gum Arabic, Turkey, fine, D.P. c	12	0 0	13	0 0			
Do. seconds, D.P. c	7	0 0	7	10 0			
Barbary, brown, BD. c	1	17 0	1	18 0			
Do. white, D.P. c	5	10 0					
E. I. fine yellow, BD. c	2	5 0	2	14 0			
Do. dark brown, B.D. c	1	15 0	2	5 0	c 6 0	1,151	2,128
— Senegal garblings, D.P. c	3	2 0			c 6 0	5,493	6,349
— Tragacanth, D.P. c	8	0 0	12	0 0	c 6 0	11	10
Iceland Moss (Lichen), D.P. lb	0	0 2½	0	0 3	lb 0 1	1,925	
Ipecacuanha Root, B.D. lb	0	1 3	0	1 6	lb 1 0	2,573	1,741
Jalap, BD. lb	0	2 2			lb 0 6	11,624	9,831
Manna, flaky, BD. lb	0	3 6			{ lb 0 3	4,664	2,958
Sicilian, BD. lb							
Musk, China, BD. oz	1	0 0	2	0 0	oz 6 0	610	777
Myrrh, East India, BD. c	5	0 0	14	0 0	c 6 0	80	67
Turkey, BD. c	2	0 0	11	10 0	{ lb 2 6		
Nux Vomica, BD. lb	0	8 0	0	9 0			
Opium, Turkey, BD. lb	0	11 0			lb 1 0	10,979	11,100
Peppermint, Oil of, F. BD. lb	0	10 6			lb 4 0	1,534	354
Quicksilver, BD. lb	0	3 11			lb 0 1	79,982	67,514
Rhubarb, East India, BD. lb	0	6 0	0	8 0	lb 1 0	3,684	9,756
Dutch, trimmed, D.P. lb	0	4 0	0	8 0	{ F. lb 1 0	8,009	1,421
Russian, BD. lb	0	8 6	0	9 0			
Saffron, French, BD. lb	0	17 6	0	17 6	lb 1 0	570	1,074
Spanish lb					{ lb 0 6	35,650	23,532
Sarsaparilla, Honduras, BD. lb	0	1 0	0	1 9			
Lisbon, BD. lb	0	2 0			{ lb 2 6	4,082	3,107
Scammony, Smyrna, D.P. lb	0	18 0	1	0 0			
Aleppo lb	0	0 3	0	0 4	E. I. lb 0 6	23,154	32,757
Senna, East India, BD. lb	0	1 6	0	1 8	{ Other sorts 0 6	7,992	23,698
Alexandria, D.P. lb	0	1 0	0	1 3			
Smyrna, D.P. lb	0	1 0	0	1 3			
Tripoli, D.P. lb	0	1 0	0	1 3			

‡‡‡ BD. In Bond. — c. Cwt. — B. P. British Possessions. — F. Foreign. — D. P. Duty paid.

THE CLIMATE OF CUBA.

ALTHOUGH the mountains of Cuba are not so high as those of Jamaica, or St. Domingo, the more northerly situation of the *Grande Antilla* gives a greater range to the thermometer than in any other of the West India islands. It has never been known to snow there; but frost occurs occasionally; and ice has been formed when a strong north wind has for some time prevailed, bringing with it the cold air of the Canadas. This took place in 1801, and again in 1812, on some high ground in the neighbourhood of the Havana, above 350 feet above the level of the sea. Hail storms are not so uncommon, occurring in general when the wind is blowing strongly from the S.S.W.; and on the tops of the highest mountains, after a copious dew, the ground is frequently whitened with hoar frost.

Instead of summer and winter, the seasons are spoken of as the rainy and the dry, although the period of demarcation is not very clearly defined. It is generally in May that the rainy season commences; but sometimes it begins in April, and occasionally not till June. Of late years, however, the island suffers much more from excessive drought than from rain. In some districts a fourth or a third part of the cattle have been cut off; and, at other places, as much as a half, from the mere want of water. The crops have probably suffered in an equal degree, though the amount of the loss is not so easily determined. These droughts are ascribed with every appearance of truth to the cutting down of the timber; and it has even been recommended that the local authorities should interfere to restrain the proprietors from denuding their estates, especially on the mountainous ridges of the great Cordillera, so as to save some portion of the native forests in the most favourable situation for attracting the moisture. The history of some of the longest settled islands in these seas seems to justify this suggestion, as we find that Antigua and Barbadoes, which now so frequently suffer from a season of drought, had nothing of that kind to complain of, in the first century of their settlement, before the trees had disappeared. Hurricanes are not so frequent in Cuba as in St. Domingo or the Leeward Islands, as, by a strange perversion of language, the smaller islands of the Archipelago are denominated in our Post-office department. When they do occur, it is generally between the middle of August and the middle of October. The French government assume that the dangerous season is from the 15th of July to the 15th of October; and, during that period, they compel their

merchant ships, in the West Indies, to retire from the open roadsteads to places of greater safety. Spanish vessels are not exposed to any restraint beyond the practice of the underwriters in the marine insurance, who are accustomed to increase their rates of premium on ships going out to sea after the 1st of August.—*Cuba: with notices of Porto Rico and the Slave Trade. By David Turnbull.*

[In another place Mr. Turnbull says, "Even here, in the empty boiling house, I found a poor negro with one leg in the stocks. The night before had been piercingly cold, as it often is in Cuba; and negroes are proverbially more sensible to it than white men. I need not say, therefore, how horrifying was the unheeded appeal of the solitary prisoner to the mayoral as we passed, of "mucho frio! mucho frio!" (We may mention, in passing, that Mr. Turnbull's account of slavery and the slave trade is very instructive.) Dr. Chervin, in the letter which we gave at p. 636 of our last volume, speaks of a temperature of 59° of Fahr. at the Havana, as if it were very low; but he speaks of the plains, and a great part at least of Mr. Turnbull's account appears to be limited to the hilly districts.]

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, March 17, 1840.

Age and Debility	20	Hooping Cough	4
Apoplexy	2	Hydrophobia	1
Asthma	6	Inflammation	4
Childbirth	1	Bowels & Stomach	4
Consumption	29	Lungs and Pleura	9
Convulsions	13	Measles	1
Diarrhœa	2	Paralysis	2
Dropsy	3	Small-pox	1
Dropsy in the Brain	5	Sore Throat & Quinsy	1
Dropsy in the Chest	1	Thrush	1
Fever	2	Unknown Causes	81
Fever, Scarlet	5		
Heart, diseased	1	Casualties	11

Decrease of Burials, as compared with the preceding week } 48

METEOROLOGICAL JOURNAL.

March.	Thermometer	Barometer
Thursday . 12	from 33 to 51	30.17 to 30.14
Friday . . 13	30 51	30.05 29.97
Saturday . 14	33 51	29.97 Stat.
Sunday . . 15	32 48	29.92 29.75
Monday . . 16	38 46	29.89 30.14
Tuesday . . 17	32 47	30.17 30.12
Wednesday 18	34 46	30.11 30.06

Wind N.W. on the 12th and two following days; on the 15th, W. and S.W.; since N.E.

On the 12th and two following days generally cloudy; the 15th overcast, small rain falling nearly all the day. The 16th and 17th generally clear; a little rain fell during the morning of the 16th. The 18th overcast; small rain fell occasionally.

Rain fallen, .1175 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, APRIL 3, 1840.

LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

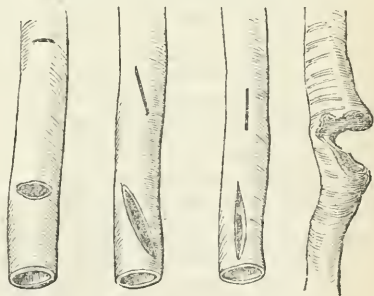
ARTERIAL SYSTEM—*continued.*

WOUNDS — *Varieties — Diagnosis — Treatment, by Astringents and Styptics, Absorbents, Cauterisation, Suture, Acupuncture, Electropuncture, Seton, Compression, Machure, Refoulement, Torsion, Ligature.*—ARTERITIS.

THE puncture of an artery may occasion, at first, a considerable hæmorrhage, but it is usually soon moderated; blood escapes into the sheath, parallelism is destroyed, a coagulum is formed, the opening is blocked up, and the artery remains permeable: occasionally, however, the hæmorrhage is very obstinate, and it was in consequence of this circumstance that the ancients recommended and we employ complete section. Simple punctures have occasionally given rise to secondary hæmorrhage; Guthrie relates two cases in which the femoral artery was wounded with a tenaculum, and in which consecutive ulceration took place, followed by hæmorrhage. When there is a longitudinal or oblique wound, (Fig. 1 and 2) the blood escapes in greater abundance than where there is simple puncture, but is arrested in a similar manner. Sometimes the vessel remains permeable, sometimes it is obliterated.

A transverse wound, not implicating more than a fourth of the circumference of the vessel (Fig. 3), takes a rounded form. As in the former case, blood coagulates in the sheath, lymph is secreted, the opening is blocked up. The cicatrix in these three cases is permanent in horses and dogs; not always so in man. In him, immediate

union of the lips of the wound very rarely occurs; there is always a new substance interposed. This substance not uncommonly gives way, and a consecutive aneurism is the consequence. If the wound affect one-half of the circumference of the vessel, the lips of the wound are still farther separated: blood flows freely, and longer than in any other species of arterial wound. It may continue until death, which is then rapidly brought about; it may be suspended by syncope, may re-appear with returning strength: then death does not occur so speedily. In those cases where death has not been the consequence, which, if the artery be large, is very rare, syncope being prolonged, a coagulum is formed, and the vessel may be obliterated. If *three-fourths* have suffered (Fig. 4.), the retraction is so



FIGS. 3, 2, 1, 4.

considerable that the edges of the vessel seem as if hollowed or bevelled out, and the diameter of the vessel is lessened. Here the cure is much more probable than in the preceding case.

Arteries may be wounded by *excessive distension*. The internal tunic first gives way, then the middle—beyond this, such an injury cannot extend. This accident may give rise to aneurism or obliteration. In certain luxations, it is

said, all the tunics may give way. These injuries are not followed by hæmorrhage, or, if blood escape at all, it is soon spontaneously arrested. A *contusing body* may partially or totally destroy the arterial tunics. On the field of battle both are common; but hæmorrhage from such accidents is unfrequent. Berard describes such a case; in which, with a scissors, the jagged end was removed, and hæmorrhage immediately followed. However, in those cases, it is usually secondary hæmorrhage, upon the throwing off the eschar, from which we have most to apprehend. The hæmorrhage following wounds of arteries may destroy life in a few moments; or it may be renewed at intervals, and death may be less speedy.

The condition of the blood exercises a certain influence upon hæmorrhage. When it flows abundantly, and only once, from a wound made in a vigorous man, the latter portion coagulates at the moment between the lips of the wound. If, instead of that, hæmorrhage is re-produced several times at certain intervals, the blood becomes serous, and the chance of spontaneous suspension is less.

With reference to the maintenance of the circulation, wounds may be divided into two classes; the one totally intercepting the passage of the blood beyond the point, the other permitting it. The first class, affecting the principal artery of a limb, may occasion gangrene; and this is more especially to be apprehended, when the satellite vein has been at the same time implicated. Guthrie speaks of it as following a wound implicating the femoral vein and artery, gangrene commencing in the toes. The ancients believed, in such a case, gangrene to be inevitable; but there are many exceptions to this rule.

Diagnosis.—A wound being made, and the quantity of blood shed being disproportioned to its extent, we believe a blood-vessel has been implicated. We first seek to determine whether it be an artery or vein. The situation of the wound, the jet, and the colour of the blood, do much in enabling us to ascertain this point: but artery and vein may be wounded, the blood is mixed, its appearance is modified. We may now employ another means of diagnosis, compression. If we press between the heart and the wound, only dark blood can flow; if between the wound and the capillaries, arterial blood alone can flow. But difficulties will still present themselves. The jerk is wanting when the wound is deep and irregular; besides, a jet of vermilion blood may be seen when only a vein is wounded; it may be dark when arterial. In some individuals suffering from fever, the circulation is naturally rapid, being accelerated by the disease; if we bleed them, the blood is shed in jerks,

and, towards the end of the bleeding, becomes so red, that it might readily be supposed that the artery was wounded. As to the second point, Hunter observed, that the blood might escape dark from the superior extremity of the artery when pressure is made above the point, and in certain diseases in which arterialisation is incomplete.

It is also desirable to ascertain whether the trunk or a branch be wounded. Again, when consecutive, it is of importance to ascertain whether it escape from the superior or inferior portion of the artery. This can only be done by compression above and below the wound, and by narrowly observing the effect.

Treatment.—The means which are employed for restraining hæmorrhage may be temporary or permanent. For instance, blood flowing in large quantity may destroy life rapidly, therefore it is necessary to act at once; and this will appear more imperative if we admit, with Morand, that of those who die on a field of battle three-fourths are from hæmorrhage. Now, nothing is easier in a large number of cases than temporarily to command a hæmorrhage. In an operation it often becomes a question, whether we should tie a bleeding vessel at the time, or continue the operation. Guthrie states, that the slightest pressure made by the finger and thumb upon a bleeding artery will suspend the hæmorrhage; pressure upon a limb would have the same effect. It often happens, that the means which we employ as temporary agents definitively arrest the hæmorrhage; this is particularly seen in the removal of a cancerous breast. If the vessels can be seen, they should be treated as if they poured out blood. The fundamental indication is, of course, to obliterate the wounded vessel; for we cannot rely on the lateral cicatrix, even if the case would admit of its being obtained. When small arteries have been wounded, either by accident or during surgical operation, the immediate object is to bring together the lips of the wound. Now the pressure so made will often arrest the hæmorrhage, and render it unnecessary to interpose any foreign body; the operation for hare-lip is evidence of that fact. The early operators by the flap method in amputation, insisted strongly on this as one of the great advantages of that operation. When blood oozes from all parts of a surface, and when, after sponging it, we cannot discover any orifice, we may apply cold astringents or styptics; we may plug with lint, amadou, or agarie. The concurrence of a spongy substance and moderate compression is in most cases preferable to astringent powders or styptics. If, in a wound recently made, we can distinguish the ends of a wounded artery, it

is necessary to apply upon each the agent we employ, as the anastomosis may equally cause hæmorrhage from the inferior extremity.

Experience has shewn, that inflammation and obliteration of arteries may be occasioned by introducing into their cavity styptics of various kinds, solid as well as fluid; mechanical obstacles, such as bougies, doe-skin, and other similar means. yet they cannot enter into comparison with the ligature, or even torsion. If the wound be very deep, and affect by contiguity important organs, a question to consider is, whether we shall enlarge the wound, and seek for the artery, or tie it at a distance. We may tie at a distance, and prevent farther loss of blood from the side next the heart, but blood will continue to flow from the farther extremity; and if, as maintained by Mr. Guthrie, the inferior end is more exposed to hæmorrhage than the superior, the evil is not controlled. Mr. Guthrie, therefore, maintains the necessity of cutting down upon the end in most cases; but, unquestionably, there are cases where this practice is unwise. Where the parts around are much disturbed, infiltration, fracture, and other circumstances, render it necessary to tie at a distance; but no definite rule can be laid down for such special cases. There are certain arteries which, from their situation, cannot be so treated: those of the perineum, for instance. We may get hold of them with the forceps, but that is only half the business. To obviate the difficulty, forceps have been invented which may be permanently applied: others employ torsion; others, "froissement." Certain arteries may be commanded by pressure; the temporal, auricular, occipital: but, even here, I prefer the ligature. There are arteries which can neither be tied, twisted, nor compressed—the nutritive artery of the tibia, the meningeal, the epigastric, wounded in paracentesis: others, which have undergone calcareous transformation. In these cases plugging has been tried; indeed, in certain cases, cauterisation must be employed. In the present day we are not justified in recommending amputation to cure hæmorrhage; but if the artery and vein be wounded, and gangrene be imminent, it must be done.

In restraining hæmorrhage or obliterating arteries, we may employ a great variety of agents; such as, 1st, styptics, refrigerants, cauterisation, plugging, suture, seton, acupuncture, electro-puncture. Second, compression, plugs, "marchure," réfolement, torsion, ligature.

Among the *astringents* and *styptics* employed to restrain hæmorrhage, or to obliterate arteries in their continuity, are, cold air, cold water, ice, acidulated water,

preparations of copper and iron; but they are applicable only to cases where a small artery is opened, or to an aneurismal tumor. Many surgeons are partial to the application of ice, but unquestionably, except in special cases, it has little value; long continued, it exposes to gangrene; but there are cases where it may be found useful.

Among the *absorbents*, many of which are also astringents, are lint, sponge, certain powders, agaric, &c. Again, we may say, these can only be employed with good effect when the hæmorrhage is inconsiderable.

Cauterisation has been used to restrain bleeding even from large arteries. The ancients employed boiling oil and the red-hot iron; for the same purpose, they amputated with red-hot knives. Besides the cruelty of these means, they cannot be depended on; they often restrain the hæmorrhage only so long as the eschar which they produce remains attached. In the present day, few of these substances are employed. The actual cautery is sometimes used after the excision of hæmorrhoidal tumors, after the removal of deep-seated tumors in the zygomatic fossa, after the ablation of the maxillary bones and tumors of the gums; but then it is employed for two purposes—that of staunching the blood, and destroying any diseased structure which may remain.

Guattani, in a case of aneurism of the external iliac, cut down upon and opened the tumor, extracted the clot, filled the sac with agaric, maintained it there by means of compresses and bandages; but this is clearly not an example to be followed.

Lambert advised that the lips of a wounded artery should be brought together and united by *suture*, under an idea that its permeability would be preserved. This is not the only method which was suggested under the apprehension that the collateral circulation was insufficient. But since it has been established that an aneurismal tumor cannot be cured, at least with any certainty, without obliteration of the diseased vessel, and the resources of the anastomosing system are better known, this means has been abandoned.

Acupuncture has been applied to the obliteration of arteries. Velpeau and myself, at the same time (1830), made experiments on this subject. The result of his experiments made upon dogs, was, that an artery of the size of an ordinary writing pen may be obliterated by a single pin, and that for larger arteries more pins are required, to produce this effect. Amussat's experiments tend to prove the insufficiency of pins to excite the necessary inflammation for the obliteration of large

arteries. My objections were, that we had no security that the pins had transfixed the artery, and that even when they had, they occasionally failed in procuring its obliteration.

Electro-puncture, which I also applied in 1830-1, fails from a similar cause—uncertainty whether the artery is transfixed; but applied to the sac itself, the result is different.

The *seton*, applied to the continuity of arteries, is equally uncertain; in fact, we can have no security that the agent is applied, unless we cut down upon and expose the artery; and if that be done, we had better apply the ligature: besides, neither acupuncture, electro-puncture, nor the seton, are available in cases of hæmorrhage.

Compression has in all times been extensively employed, both as a temporary and a permanent means of restraining hæmorrhage. It may be applied directly upon the bleeding point; but then it is, or should be, a temporary agent, for which another should be substituted. Compression is commonly applied at some distance from the injured point; for instance, preparatory to amputation or removal of a tumor. For the purpose of suspending hæmorrhage during operation, the ancients would seem to have employed compression, but in what manner they applied it, is not clearly shewn. Paré is the first person from whose writings we derive any accurate idea of the mode in which compression was employed; but his circular pressure was an evil agent. This arrangement was improved upon by the interposition of a pad over the course of an artery. In 1674, Morel invented the "garrot;" which was afterwards variously modified, and by which any extent of pressure might be made by twisting the piece of wood attached to it. In 1718, Petit presented to the Academy of Sciences a tourniquet which he had invented, for the purpose of commanding hæmorrhage in amputation of the thigh: since his time, the tourniquet has been variously modified, but the principle still remains unchanged. If assistants are few, this instrument is of first-rate importance; but it cannot be compared with the hand of a steady assistant, furnished, or not, with a padded key. All places are not equally proper for making compression; the artery should be superficial, and supported by a bone; but, then, few arteries present these two conditions, except the brachial, the radial in its lower third, the femoral upon the pubis: still we may compress, though with less certainty, the axilla behind the clavicle, upon the first rib, the femoral near the middle of the thigh. Other arteries are, it is true, placed superficially,

but rest upon parts too soft and flexible to admit of compression. Others are placed over proper supports, but then they are too deep seated to be readily acted upon. Such is the compression of the abdominal aorta upon the spine. It is sometimes employed to obliterate small arteries resting upon bones—those of the head, for instance. Generally, however, direct pressure is an uncertain means—is inconvenient, from its irritating the surface of a wound and opposing union by first intention. In many regions it is utterly impracticable, for want of the necessary elements of success. When we employ circular compression upon a limb, to prevent congestion at its lower part, it is necessary to bandage from below, until we cover the compresses which may be placed on the wound. When our object is to obliterate the artery, the compression must be long continued: if it be removed before the clot is adherent, hæmorrhage will infallibly occur. Again, we apply it to repress hæmorrhage from mucous surfaces, by plugging. This is employed in hæmorrhage from the nose, the vagina, the rectum. The plugging material may be impregnated with sulphate of copper, or other styptic or astringent substances. Usually, plugging should not be had recourse to till other means have failed: it always irritates the parts with which it is in contact; if the parietes be muscular, like the rectum, it excites contraction.

We may now indicate points at which compression may be applied. The *common carotid* rests upon an osseous plane formed by the cervical region of the spine; at its superior part, it is easily felt under the skin. We may there compress it with the fingers, but the vicinity of the larynx renders the operation difficult and fatiguing. The *external maxillary* is very easy to compress at the moment it passes under the ramus of the jaw, in front of the masseter muscle. The *temporal artery* may be compressed in front of the ear, two lines from the base of the tragus. The *subclavian* it is difficult to compress; the omoclavicular space is singularly variable; according to the curvature of the clavicle, the artery is found at different depths; the thumb, supposing it may get to the necessary depth, will soon be fatigued, but whatever mode of compression may be used, it is uncertain. The *axillary artery*, Dahl believed, might be compressed below the clavicle, taking as a support the second and third ribs. With the fingers it is impossible efficaciously to compress through the thick muscular layer between them and the vessel. In the axilla it is different; the head of the humerus serves as a point of support: compression, whether by the fingers or otherwise, must be ap-

plied upon the point which separates the anterior from the middle-third of the axilla. The *brachial* artery may be compressed along the whole arm, passing, as it does, along the internal border of the biceps; the large nerves which accompany it, assist in finding it, but they render compression painful. The *radial* artery may be compressed where the pulse is felt. The *ulnar*, outside of the tendon of the flexor carpi ulnaris. The *abdominal aorta* may be compressed upon the lumbar vertebrae: the four fingers should be ranged upon the linea alba; the patient should be so placed as to relax completely the abdominal muscles. In the *external iliac*, after relaxing the abdominal muscles, pressure should be made at the edge of the superior outlet of the pelvis, compression being applied a little outwards from that point. In the *femoral*, compression is most important, most sure, and most employed. The ileo-pectineal eminence is the point of support; the thumb answers very well; it should be placed across the vessel. At the middle-third of the thigh, the femur itself serves as a point of support. There a tourniquet answers well. In the ham it is much more difficult to compress, because of the depth at which the artery is situated; the fingers would be too soon fatigued, and the tourniquet would be too painful. The divisions of the femoral may be compressed at different points where we tie them, but such compression is rarely used.

A very early idea entertained on the subject of restraining hæmorrhage, was, that excentric compression might avail; this was to be effected by introducing certain substances within the arterial tube, like a cork in a bottle. In the works of Avicenna it is held to be very important. Many surgeons have employed it where an artery was so much ossified that it was likely to give way under the ligature, as usually applied. A bougie may then be introduced, and a ligature placed around the vessel, so as to keep it there. Before, and indeed after, Paré's time, cones of alum or sulphate of copper were introduced; these cones did not act by compression, but by exciting arteritis.

Machure, or gnawing, is a term employed in consequence of the fancied similarity of the operation to that performed by brute animals upon the umbilical cord. In 1820, Maunoir invented pincers with which the internal coats were injured to the necessary extent, but it is an uncertain method of treatment. Usually it will be found that where the artery is thus pinched, there will be a tendency to form a coagulum; but to render coagulation more probable, it should be made to act on several points.

Refulement, or inversion, is performed by seizing an artery by means of a blunt scissors or forceps, so that the internal and middle tunics shall be ruptured. When this is accomplished, the instrument is not removed, but it is pushed towards the heart, and it will carry with it those tunics. I merely indicate these means for the purpose of shewing the agents which have been employed.

The *torsion* has been very frequently used; but though the modern French seem to dispute the priority of the invention, there can be no doubt that it is indicated by *Ætius*—that it was pretty distinctly described by *Peyrilhé*, or, indeed, that *Léveillé*, in 1812, textually cited the passage from *Galen*. In performing this operation, which may be employed on the continuity or upon the cut extremity of an artery, it is well to be provided with forceps of a particular construction. Upon an amputated surface, an artery is seized with a common forceps; it is drawn forward, and, with another forceps, is separated as completely as possible from adjoining parts. The vessel being drawn forward to the extent of five or six lines, with a torsion forceps held in the right hand, the artery is seized perpendicularly to its axis, and the forceps is then fixed. With a second forceps the vessel is then grasped at the level of the wound, and the internal and middle tunics are ruptured. The fixed forceps is now twisted round, until the vessel has revolved seven or eight times on its own axis: beyond that, the twisting process must not be carried, or the end of the artery may come off. In applying this method to arteries in their continuity, *Thierry* passes *Deschamps*'s needle under the artery, which he twists, and proportions the revolutions to the size of the artery.

The operation of the *ligature* of arteries is so important to the surgeon, that it is essential it should be well considered and well understood. I believe the ligature was employed at a very early period; but the first formal mention of it is contained in *Celsus*. Even in his time the application of it was very limited; for he insists upon hæmorrhage as one of the most formidable of the dangers attendant upon amputation, and recommends, for restraining it, plugging, venegar, &c. Indeed it is not clear that the ligature was employed to restrain hæmorrhage after amputation before the time of *Paré*. The employment of the ligature by means of the forceps seems not to have been adopted till after the time of *Petit*. *Paré* employed it by including the artery and surrounding structures by means of a needle. *Petit* preferred pressure, and cauterly unquestionably. Indeed, the Academy of Surgery

for some time preferred styptics and agaric to the ligature. Heister recommended that the ligature should be used with the forceps; but, perhaps, Monro most powerfully contributed to induce surgeons in the last century to adopt the ligature upon the artery without including adjoining structures: he also proved that the pain of the ligature, at the time of application, is not great; that it does not subject the patient to violent consecutive pain, convulsions, inflammation, or suppuration, and that it is detached with facility.

Before we proceed further we must consider the different methods of applying the ligature, and the effect which a circular constriction produces. Jones, Vacca, Beclard, Travers, Mance, and others, have carefully investigated this subject, and ascertained that the first effect of a ligature, tightly drawn, was to make a fair and complete circular incision of the internal and middle tunics, and a puckering of the external coat of the artery. Soon a coagulum is formed, which extends from the ligature towards the first moderate collateral branch, which is given off by the vessel: this clot is as much larger and longer as the collateral vessel is further removed from the ligature. It completely fails if between the two points there be no more than a space of two lines, and if the arteries be voluminous. In the succeeding twenty-four hours coagulable lymph is secreted and deposited between the clot and the internal tunic, and causes intimate union between these parts; an analogous secretion occurs external to the vessel, so that the two extremities of the artery are plunged in the midst of an organisable mass, which assures the future obliteration of the vessel. The secretion of this matter within the vessel is certainly more abundant when the internal and middle tunics are fairly cut through than when they are merely brought together. This lymph becomes more and more solid, passing through the different stages of organization. During this time the thread excites, at the point where it is applied, ulcerative inflammation, and, in process of time, the artery is fairly cut through. If the process be interrupted—if the irritation be too great, purulent matter may be poured out either externally and internally, or both. Most commonly the secretion of pus is trifling, and confined to the point where the ligature is found, ceasing when that is removed. In either case the course of the blood is interrupted; first, by the fibrinous clot which partially fills the vessel; second, by the lymph which retains the clot in its place, and maintains the puckering which the ligature produced; third, by similar lymph effused externally, which supports the extremities of the

artery as the two ends of a fractured bone are supported by callus. Gradually the clot is absorbed, the parietes approach, unite from the ligature to the collateral, and the artery is entirely obliterated to that extent, and is ultimately transformed into a fibrous cord, which eventually disappears.

If the process we have described be interrupted by violent or specific inflammation, the obliteration of the vessel is only temporary; and when the ligature comes away, the non-adherent clot is forced out, and blood flows. Hæmorrhage should be apprehended if the ligatures have been applied too near the origin of a moderate sized branch; the formation of a clot, in that case, being impossible or imperfect. Still, in this case, nature may prevent the effusion of blood; lymph may fill up the part between the ligature and the collateral, and at the same time surround it externally. Under whatever circumstances the ligature be employed, the main phenomena are the same. The time necessary for the obliteration above and below the ligature, so as to resist the impulse of the blood, is variable; usually as much shorter as an artery is smaller, as the ligature has been placed farther from the point where a moderate sized collateral is given off, as the artery is healthy, and as the general health is good. The ligature has been detached from the femoral in six days without hæmorrhage, and in eighteen with. Usually it happens from the eleventh to the twentieth day; but from the fourth or fifth the superior extremity is no longer permeable.

Many persons have conceived that a simple division of the internal and middle tunic by a ligature, which is removed in a few minutes, was sufficient to effect obliteration; and this induced the trial of *temporary ligatures*, which present one material advantage—that of allowing union of the wound by first intention; but unfortunately the experiments of Travers, Dalrymple, and Hodgson, do not justify the hopes which were entertained of them. Sometimes, when the ligature has remained in place twenty-four hours, obliteration has occurred; but there is no certainty; and the presence of the ligature for twenty-four hours would be enough to prevent union by first intention. Scarpa, however, who clung to the idea that the ligature should be removed at the earliest possible moment, found that it might be removed in from three to five days.

But although, in ordinary cases, adhesive inflammation sets in rapidly, it is not always so in feeble subjects—those in whom the artery is either diseased or fragile: in these cases the ligature may cut through the coats without interrupting the current of blood, and hæmorrhage the

most grave may follow. To prevent or repress such hæmorrhage, the ligature "*d'attente*" was introduced, and applied in the following manner:—above the constricting ligature one or more others are applied, to be constricted if the one fail. Hunter and Desault had another object in view; they successively constricted them, increasing from the superior to the inferior, for the purpose of gradually diminishing the power of the current before it arrived at the constricted point. The use of this plan is exploded. In the present day we are fully sensible of all the mischief of denuding the artery and interposing so many foreign bodies, producing suppuration and other inconvenience; besides, if the first ligature failed, it is almost certain the second would do so likewise, as the inflamed artery would be at once cut through by the tightened ligature.

Again, it was the custom of the ancients to apply two ligatures upon a vessel, and make a section between them. After having been long abandoned, it was resuscitated by Bell and Abernethy, and by M. Maunoir, who published, in 1802, a pamphlet on the subject. They maintained that arteries are strongly retractile; and, when puckered by means of two ligatures, they are violently dragged at each impulsion of the heart; and that to prevent this it is prudent to place the arteries in the same condition as after amputation. So much is certain: hæmorrhage after amputation is less frequent than when an artery is tied in its continuity. This is denied by some persons; but it is no less a fact. The views of the persons who resuscitated this plan have not been sanctioned by experience: often after the employment of this method hæmorrhage occurred: besides, it is not applicable to those regions where the artery can only be exposed to a very small extent.

Scarpa, who had serious apprehensions of the danger attendant upon the section of arterial tunics, sought to bring them into apposition without accomplishing the division; for this purpose he used flat ligatures, and interposed between them and the artery small rolls of lint or plaister, drawing the ligatures moderately tight. This ligature was removed at the end of three or four days, a time sufficiently long, in his opinion, to secure adhesion; but, at this time, it is not always easy to remove the apparatus; and Scarpa found it necessary to invent an instrument to accomplish this object. The idea of the roll, however, belongs to times anterior to those of Scarpa—those of Dionis, Pàré, Platner, Heister; but the application of the principle belongs to Scarpa. In the present day, the use of the ligature and cylinder is almost totally

abandoned, except where the artery is so fragile as to excite well-founded apprehension that it would not resist the ordinary ligature. We have also abandoned the various forceps by means of which the same end was sought to be obtained; they irritate the wound; they dispose the artery to ulcerate, and only incompletely obliterate the vessel in many cases.

Various ligatures have been employed to tie arteries: for many years men sought to discover some agent which might be absorbed, or remain at the part without exciting irritation, and so constitute no obstacle to immediate union; and many substances were used—doe-skin, cat gut, silk, metallic substances, but most of them were soon abandoned, and ligature silk is commonly preferred.

Again, the form of the ligature has been much dwelt on; one party, wedded to the section, preferring round and small; the other, dreading section, and only requiring apposition, chose to employ flat ligatures. Observation, on a large scale, has demonstrated that large flat ligatures, applied on healthy arteries, give no more protection than the most delicate, and are much more inconvenient.

Some men have recommended that the ligature should be cut off close to the knot. Its sojourn under the skin is not usually very inconvenient; commonly they occasion little abscesses, and are discharged with the pus contained in them. Lawrence, Travers, Delpech, and Beclard, have recommended that plan.

Our next point is to consider the modes of applying the ligature, and, first, we will examine it upon an amputated surface. Your anatomical knowledge will inform you where the artery should be found; you pass a tenaculum through it, or seize it with a forceps; it is drawn forward as little encumbered as possible with surrounding tissues, and the ligature is applied. In tying the artery, its cellular sheath should be included; if this be not included, the section may be completed before the vessel is obliterated. The constriction ought to be sufficient to cause a bulging above and below the ligature; and we may then be satisfied that the internal and middle tunics are incised, the external only remaining entire. When the surface does not bleed, although we know that vessels open upon it, all compression on the course of the vessel should cease; the surface should be sponged with warm water; the spasm may then cease, the course of the blood be re-established, the arteries jerk, and the ligature be applied. If we have to apply a ligature in the course of the vessel, which we may have to do for aneurism, hæmorrhage, and for the purpose of repressing the growth

of certain tumors, we place the limb upon which we have to operate in a semi-flexed state; we direct the eye upon the course of the artery, we then explore with the finger, the only way of avoiding difficulties; we have preparations for compression, the finger or a tourniquet, to be used if necessary. I say if necessary, because I know nothing so desirable to avoid in the performance of an operation as the congestion which circular compression occasions. The artery having been felt, and the integument being tense, an incision from two to four inches long, parallel to it, should be made. The centre of the incision should correspond to the point in which the artery is to be taken up. It is better that the incision should be too long than too short: if the artery be deep, some prefer making the incision a little oblique. If the artery be superficial, the first incision should not be too deep; it is better to incise the skin at twice than to come down at once upon the sheath of the vessel. With much precaution the several fasciæ or muscular fibres should be cut, and the sheath opened with great care, and the artery disturbed as little as possible, to avoid supuration. The artery is easily distinguished by its dull yellow colour, by its flattening when pressure is made at a point nearer to the heart, by its beating when we press below. We must carefully separate it from veins and nerves. Whenever an artery is accompanied by a large vein, the needle should always be made to enter on the side of the vein, as there is less chance of injury. When the ligature is placed around the vessel, before it is tightened we draw it up for the purpose of ascertaining that the artery is really included; this is not always so easy a matter as may be supposed. Experienced surgeons have tied the median and other nerves for the artery. The operation completed, one end of the ligature is cut off close to the knot; the other brought out at the most depending part of the incision; the wound should then be brought together for the purpose of endeavouring to bring about immediate union, for supuration is always uncomfortable, as giving reason to apprehend hæmorrhage. The ligature of nerves is a serious accident, paralysis or tetanus may be the consequence. The ligature of veins is little less serious: if, at the same moment, we intercept the circulation in the principal artery and vein of a limb, gangrene is almost inevitable: the ligature of a smaller vein, although it may not cause gangrene, may produce phlebitis. In the present day, it is rarely that we employ the ligature with the view of commanding hæmorrhage during certain operations; still it is more commonly done in our own than in other countries.

It can rarely be required. In the disarticulation of the thigh it might be advisable if the patient were very feeble; and it were of great importance to prevent arterial blood-shed: it is, then, questionable whether it be not best to employ a broad ligature, and merely bring the parietes in contact, and tie the artery upon the surface of the stump.

In the application of the ligature there are certain general rules to be observed, certain guides which facilitate the operation. For instance, in the ligature of the subclavian, the clavicle determines the course of the incision. Again, each artery has a muscle, which might be regarded as its satellite: the sartorius may be said to fill that office for the femoral; the mastoid for the carotid; the biceps for the humeral; the supinator longus for the radial; the masseter for the facial: they regulate the direction of the incision. Again, certain muscles may indicate where the artery is to be tied: in the absence of the tubercle on the first rib, the scalenus anticus would be a guide to the subclavian. Tendons, and even nerves, are also important: in the ligature of the humeral artery the median nerve is a guide. Again, in tying the subclavian, we have the clavicle, the trapezius, and the mastoid muscles circumscribe a space of great importance. They constitute three starting points for the incisions, of which we must choose one. As a general rule, the arteries to be tied are found in triangular spaces; and one line of the triangle generally directs the incision. Occasionally these lines fail, the muscles being obscured by fat. When they fail we can use imaginary lines.

Great desire has been manifested on the continent to substitute the torsion for the ligature, in great operations, wounded arteries, and in cases of aneurism, and it is, therefore, right shortly to consider this question, and to examine the objections made to the ligature. What are they? Nothing against its simplicity, nothing against the facility of applying it, nothing against the pain which it occasions, nothing against its consecutive accidents. Now what are the objections which may fairly be made against the *torsion*? It is neither simple nor easy: its difficulty, then, is a strong argument against it. Hospital surgeons of experience have tried it, and failed. I know the answer to that is, that the operation was ill performed; but if this be the case with eminent operators, what is to happen with practitioners in the country, whose opportunities of doing such operations are unfrequent? To perform *torsion*, it is necessary to denude the artery to the extent of half an inch; this must increase the chances of hæmorrhage. It is said that *torsion* facilitates union by first

intention. This is not true; the hard twisted extremity of the artery is as much a foreign body as the ligature cut short. Again, may not the artery untwist? such things have happened in experiments. In many cases, on the dead body, the pressure of a syringe has failed to overcome the resistance; but can we compare the action of a syringe to that of the heart? Can we compare the dead body with the living? I have no wish to deny that success has often attended the use of the torsion; the facts are well established; but what means which has been resorted to for arresting hæmorrhage does not number certain successful cases? No one can deny that very grave cases of hæmorrhage have ceased spontaneously. What is required in an hæmostatic agent is, that its physical action may be sufficiently energetic, and sufficiently sustained to give nature time to develop the definitive means of arresting the hæmorrhage; and, so far as I know, for the accomplishment of this result, we know, at present, no means which should supersede the ligature. It is the ligature which should be, and which is, employed whenever an important artery requires to be secured. Whatever be the means we employ to repress hæmorrhage, there are certain circumstances to be borne in mind—certain things to be associated with them: among these, position of the part is most important, absolute quiet, the most rigid regimen, and many other things too obvious to point out.

ARTERITIS.

Redness of the internal tunic alone, certainly cannot be relied on as evidence of inflammation of that tunic; and therefore the opinion of Frank, so long followed, cannot in the present day be accepted. This redness is always a uniform tint, and is not produced by any vascular injection; in fact, it is, as it were, a simple dying or colouring. Rigot and Trousseau, some years ago, sacrificed nineteen animals, and examined the vessels successively at the end of one, two, three, four, twenty-four hours, and so on. In those which were examined at the end of a few hours, the internal tunics were perfectly natural; beyond twenty-four hours, they presented the redness we are considering. In winter this redness is more rarely seen than in summer; it is as much more tardily developed as the body longer resists decomposition. This redness is not accompanied by any other modifications in the physical conditions of this membrane. When this colour is found in the arteries, it may also be found in the veins and in the cavities of the heart; being dependent in each upon imbibition. This redness is often found in patches or bands which

corresponded to masses of coagulum which had rested on those points. It is quite true that this redness is very commonly seen in arteries in the vicinity of an inflamed part, but I hold it to be even then no evidence of inflammation of these tunics, but of the existence of a greater quantity of coagulum in those vessels. It has been peremptorily asked why, when two bodies are placed under exactly similar circumstances, the one shall, at the end of a few hours, present this character, the other not? Simply, I apprehend, because they have died of different diseases—because the condition of the blood was not similar, and because one resisted decomposition for a longer time than the other.

In the absence of any physical change in either of the arterial tunics—in the absence of any accidental production within the arterial tube or in the substance of the parietes, I am disposed to maintain that redness of the internal tunic is no evidence of inflammation. It must not, however, be supposed that I maintain that inflammation of this tunic cannot happen; it is only necessary to cut off the circulation through an arterial tube to procure adhesion of this surface; and adhesion, I apprehend, never occurs without inflammatory action. Take also the ductus arteriosus and the umbilical arteries as illustrations of this point. But although this redness alone be no evidence of inflammation, it is different when it occurs in conjunction with other changes, whether of that tunic alone or with the others which enter into the composition of the arterial parietes. If to this uniform colouring of the internal tunic be added a punctiform or arborescent injection of the other tunics, together with a thickening of either, the presence of solid coagula, false membrane, or pus in the interior, we can no longer doubt the existence of inflammation in these parietes. If, on the external surface of an artery, evidence of increased vascular action be found—if the vasa vasorum be enlarged and gorged with blood—if the cellular tissue which unites the internal to the middle tunic be friable—if these membranes can be separated from each other without difficulty—if coagula be found at the point, and the internal tunic has lost its polish—and if held between one and the light, it presents a shrivelled character—if there be an increase of the thickness of these parietes, with loss of consistency or elasticity, so as to give way easily under the ligature; then we may fairly conclude that inflammation has affected those tunics. But there are other features still more conclusive of the existence of this disease: lymph may be effused either upon the internal or external

surface, or between the parietes of the vessel, and may become organized, as in serous membranes—may present the characters of a serous, fibrous, fibro-cartilaginous tissue—or may be transformed into calcareous laminæ; may arrange itself within the canal as a stratum concentric to the internal tunic, or as floating flakes, or it may constitute masses of sufficient bulk to block up the vessel. Hodgson has seen the subclavian obliterated in this way. Pus may be secreted and deposited within the vessel, but more frequently between the several tunics. Andral has seen the internal membrane of the aorta raised by half a dozen small abscesses filled with pus. These small abscesses between the internal and middle tunics, end by ulcerating, and their contents are evacuated. Those small ulcerations often seen on the internal surface of the aorta, are, no doubt, thus produced. They are sometimes as large as a fourpenny-piece, but usually superficial. Meckel describes a case which clearly establishes this point. All these phenomena are seldom observed together. Sometimes, with a change in the consistency of the parietes, we may find pus or lymph; at others, we shall find false membrane, with coagula. Sometimes, with false membrane, there is a coagulum separated from the arterial tunics by this membrane; more frequently, however, when a coagulum exists, it is in more or less direct contact with the internal tunic. I would therefore say, that inflammation of arteries, and indeed of veins, is manifested by a more or less marked redness of the internal tunic; its polish and glisten are lost, it appears dull and villous, and may be detached from the middle tunic with more or less facility. The vasa vasorum are injected and distended to some distance on either side of the inflamed point; but if the inflammation be considerable, they are lost in the redness and the tumefaction at the point. These vessels cannot be detected penetrating the internal tunic, but may sometimes be seen ramifying between that and the middle tunic. If the redness, joined to tumefaction, to softening, and to vascular injection, be good evidence of arterial inflammation, it is still more certain, if possible, when at the same time we detect other products of inflammation—lymph, pus, and false membrane.

A good deal of difference of opinion exists, as to what constitutes the first sign of inflammation of arteries. Sasse believed that the earliest sign of inflammation was a vascular injection of the external tunic. Gordon inclines to the same opinion. Cruveilhier states, that, in his experience, the first sign of a commencing inflammation is a coagulation of the blood circu-

lating in the vessel. To establish which of these opinions is the correct one, if either, would be extremely difficult, and could lead to no commensurate good. I have, however, no difficulty in stating, that Cruveilhier's opinion, that coagulation of the blood and obliteration of the vessel, are the inevitable consequences of inflammation of these tunics, appears to me too absolute. In some cases, the coagulum consequent on inflammation will not be of sufficient bulk to block up a large artery; it may constitute a cylindrical layer, through which the blood may pass. Although it may be laid down as a rule, that arterial inflammation almost necessarily brings about the formation of a coagulum of sufficient volume to obliterate the vessel, I am bound to state my belief that arteritis may exist, now and then, without obliterating an artery. It is not my purpose to enter further upon the subject of arteritis, than to facilitate the comprehension of the action of different agents upon these tubes, and the subject of aneurism.

ST. THOMAS'S HOSPITAL.

From the Report of the Commissioners for inquiring concerning Charities.

JOINT REPORT OF MR. WROTTESELEY AND MR. SMITH, DATED JUNE 1837.

This hospital was originally founded by Richard, Prior of Bermondsey, in 1213, for converts and poor children. It was remodelled in 1215 by Peter de Rupibus, Bishop of Winchester, whose foundation was for canons regular. The hospital continued to be held of the prior and abbot of Bermondsey, and in 1538 was valued by the visitors at 266l. 17s. 6d. It was surrendered to Henry VIII. in the thirtieth year of his reign.

Between 1540 and 1550 the citizens of London purchased the suppressed hospital, which was then vacant, from the crown, and repaired and adapted it for the reception of poor, lame, and diseased people; and in 1552 it was opened under the regulations detailed in a charter from the King.

By this charter, dated August 12, 1551, King Edward VI. considering the miserable condition of the poor, weak, and sick people, lying and begging in the highways and streets of London, to their no small grief and pain, and to the great infection and molestation of his subjects, and their health and security no less desiring than the curing and sustentation of the aforesaid poor, sick, and weak people, granted

to the mayor, commonalty, and citizens of the City of London, all the house and site late of the Hospital of Thomas Becket, in Southwark, lately called the Hospital of St. Thomas, in Southwark, and the church and all the precincts thereof. With these were granted also, the rectory of St. Thomas, and all the property in the parish of St. Thomas Becket, in Newington, in St. George's, Southwark, St. Saviour, and other parts, which had belonged to the late hospital, amounting to the clear annual value of 15*l.* 17*s.* 1*d.*, which the mayor, &c., and their successors for ever, were to hold by fealty only. The Hospital was now to be called the House of the Poor in Southwark, of the foundation of King Edward VI.; and the mayor, &c., from its funds were to provide two ministers for the parish and hospital church of St. Thomas, and two women or sisters to wait on the sick and poor in the Hospital; also one fit door-keeper to open the door to the poor there entering in and going out, and one apt and skillful surgeon to heal the sick and infirm in the said hospital, and one honest, sober, and pious man, who should be overseer and deputy of the mayor, &c., to oversee the Hospital, and to order and dispose of its revenues. He gave license also to any of his subjects to grant or devise, or sell, to the said mayor, &c., for the benefit of the Hospital, any property not exceeding the annual value of 46*l.*

In 1553, the property of the Hospital was again granted and secured to it by a charter appointing the common government of it and of Christ's and Bridewell Hospitals. Under this charter the corporation of the city were incorporated governors of all these three Hospitals, and empowered to act in all their affairs, and to make ordinances and appoint ministers or governors for their management.

In 1782, after disputes which had lasted many years between the corporation and certain other persons elected, and claiming to act as governors of the Hospitals, in virtue of donations made by them or otherwise, an arrangement or compromise was entered into and confirmed by Act of Parliament, under which the corporation of London have been since represented in the government of this Hospital by all the aldermen, for the time being, and twelve members of the common council appointed by that court. These governors are termed corporation governors.

In the period between 1553 and 1782 it appears that the Hospital was frequently embarrassed for want of sufficient funds, and was obliged to borrow from various sources; and this, although the property of the old Savoy Hospital founded by

Henry VII., which, in 1553, was conveyed to the corporation for the joint benefit of all the three hospitals, was, in 1562, granted to St. Thomas's alone. In time, however, gifts to a great amount were made by various private individuals to the support of this Hospital, and it was entirely relieved from its difficulties.

From these and from various other sources the annual revenue of the Hospital has now accumulated to the following amount:—

Rents of property in London, Southwark, and the suburbs of London, the greater part consisting of houses in various streets in the city, as the Old Bailey, Bow lane, Cheapside, and Paternoster-row, and in Wapping, Hackney, and the Borough in the neighbourhood of the Hospital	£13,962	1	0
Rents of estates in the country, situated for the most part in Buckinghamshire, Cambridgeshire, Derbyshire, Essex, and Middlesex	9,865	15	2
Annuities	142	6	8
Dividends of stock ..	671	10	8
Timber, average of ten years	236	6	0
From various other sources detailed in the report	879	14	2
	<u>£25,757</u>	<u>13</u>	<u>8</u>

The balance between several uncertain and casual receipts, and a number of yearly charges, more or less variable in amount, may be averaged at 526*l.* 6*s.* 6*d.* against the Hospital; deducting which, there remains for the general purposes of the Institution, 25,231*l.* 7*s.* 2*d.* Between 1780 and 1800 the rental increased 5000*l.* The majority of the building leases will fall in between 1860 and 1880, at which time a considerable increase of revenue is anticipated.

The total amount of personal property given by various donors for the general purposes of the Hospital, including the benefactions of donation governors, from 1693 to the commencement of 1837, is 184,378*l.*

The whole amount of the revenue, after deducting repairs, costs of new buildings, salaries of officers and servants, and other various contingent expenses, is spent in the care of about 46,700 sick and maimed poor annually, of whom about 3300 are admitted into the hospital, and are there provided with food, lodging, and attendance.

Among the disbursements of the funds, the most important are as follows, stating each nearly at the average of ten years from 1827 to 1836 inclusive:—

Repairs	£4500	0	0
Salaries and gratuities	4750	0	0
Malt and hops	880	0	0
Coals and wood	900	0	0
Furniture, bedding, &c.	800	0	0
Provisions	3700	0	0
Medicine and surgery	3500	0	0
Annual dinners	120	0	0
Stationery, &c.	125	0	0

The total amount of the expenditure in these years has varied from nearly 28,000*l.* to nearly 75,000*l.*, from the different amounts laid out in the purchase of estates and exchequer bills, and in defraying legal and other variable charges. In each year the balance remaining in the hands of the treasurer has been, on an average, about 1000*l.*

Government of the Hospital.—There are three kinds of governors; first, corporation governors; second, special governors, or governors by appointment, as they are here termed; third, donation governors.

The corporation governors are the lord mayor, the aldermen, and twelve members of the court of common council of the City of London. They have all the rights of other governors: if the Lord Mayor be present at a court, he takes the chair; and the president of the Hospital is always chosen from among the aldermen.

The special governors are appointed by the governors assembled at a general court, or by the standing committee subject to their approval. The appointment is made to scarcely any but retired officers of the Hospital, and to some of the executors of benefactors: they are not required to contribute any thing towards the funds of the establishment.

The donation governors are nominated by any governor in court or committee, and, if approved, acquire all the rights of governors by the payment of 50*l.* or upwards to the funds of the hospital. There is no limit to the number of this class of governors: they amount at present to 220; and no particular qualification is required of them.

With the exception of their share in the management of the institution, none of the governors receive any advantage from their office; and there is no ground for believing that any have made use of their privileges to obtain any personal advantage. The only instances in which articles have been supplied by governors, are those of the coals and some of the drugs, which are still furnished by parties who, after enjoying the custom of the hospital for several years, were subsequently made governors. The instances in which hospital property has been let to governors, are few and unimportant, and in all a full and fair rent is obtained.

The governing body of the hospital, or the body in which all power is vested in the last resort, is that of the governors in general court assembled. The executive or managing body, by whom almost all affairs are transacted in the first instance, subject to the control of the general court, is a standing committee, selected from the whole of the governors, and named the Grand Committee.

General courts are holden four times in every year, and at other times whenever special business requires. At these courts the steward, matron, and all other officers of higher rank, are appointed; and the proceedings of the grand committee are confirmed or amended.

The grand committee is composed of the president and treasurer, and thirty governors, who are elected for three years, and are ineligible for one year after their retirement. The members of this committee are appointed at the July general court, and at least ten members are elected in each year. The treasurer having struck out the names of those who have served their three years, or have not attended once in the course of the past year, selects, to fill the vacancies, those governors in preference who retired at the previous court, and then fills other vacancies with the names of other governors who are most likely to attend the meetings regularly. The treasurer's list is presented to the committee and to the general court, but is never altered by either of them.

The quorum of this committee is 5, and they meet on an average about once a month. They appoint the apothecary and some inferior officers, but the election of servants still inferior rests with the treasurer, who is also in the habit of directing all repairs of a trifling description to be done on his own authority. All the more important repairs and improvements in the hospital are performed under the sanction of the committee*.

Internal Regulation.

Patients, generally speaking, are received into the hospital on Tuesdays only; but accidents, and very urgent cases of any kind, are admitted at all times, and the urgency of the case may always be said to

* Here follows, in the Report, a remark similar to that which was quoted in reference to the extent of the powers exercised by the Treasurer of Guy's Hospital; and it is stated, that although these powers are somewhat greater than ought in strictness to be confided to any individual, yet the talents and long experience of Mr. Chapman, as well as the fairness and excellence of his administration, had contributed more to the benefit of the hospital than it might have received if the business which he constantly transacts had been placed under the management of any committee.

constitute the only claim to admission. A governor's recommendation has a preference only among cases of equal urgency, and for all other purposes it is entirely disregarded.

Any patient applying at the steward's office on a Tuesday, is provided with a petition, stating his age and disease, and he is sent with this to the taking-in room, where, according to the presumed nature of his case, he is examined either by the physician or the surgeon in attendance, who marks his petition so as to indicate to the steward how far the case merits or demands admission, and under whose care it should be placed. The patient then again goes to the steward's office, whence, in compliance with the mark of the medical officer, he is either dismissed or at once sent to one of the wards. If, among those who apply for admission, there are several more than can be admitted, whose cases are not of extreme urgency, but who all, in an equal degree, merit reception, a selection of a sufficient number to fill up all the vacant beds is made by lot; unless any of them have a governor's recommendation, and then these are first admitted, and the lots are drawn among the remainder. Except in these cases, a governor's letter is useless. No conditions of age, country, or character, are required; but it is usually demanded, except in cases of urgency, that some friend of the patient should engage to provide him with clean body-linen once a week, and to remove him from the hospital when required so to do. The cost of the former is 3d. or 4d. per week; and for the latter, in case of death, if the party giving the security will not bury the deceased, a guinea is demanded towards the expense of burial by the hospital.

Pauper patients are received like others, but the overseer of their parish is required to become their security for the engagements above mentioned, as well as for the payment of 9d. a-day to the hospital, for the patient's maintenance, so long as he remains in it. There is also a class called city patients, who are received on a requisition from the Lord Mayor or aldermen when sitting as justices; and another of Admiralty patients, who are admitted on the requisition of the physician-general of the navy. In each case it is usual for the requisitionists to supply the patients with clothes. A fee of 5s. is paid to the hospital on the admission of venereal parish patients; a fee of 3s. 6d. on that of clean city patients, and 10s. 6d. on that of venereal; and the same on that of Admiralty patients, who also pay 1s. on their discharge. The sums are paid for parish patients, by their respective parishes; for city patients, by the Chamberlain; and for

Admiralty patients, by the paymaster of the navy.

There are two exceptions to the admission of patients, founded on the nature of their diseases:—1st. Incurable cases are not received, except in those instances in which medical skill may ameliorate, if not cure, the sufferings of the patient; about twelve cases annually are discharged on this ground. 2dly. There is an old by-law, "That no person be received who is visited, or suspected to be visited, with the plague, itch, scald-head, or other infectious diseases; and if any such be taken in, then to be discharged as soon as discovered." This rule is not adhered to in any urgent cases, or in accidents.

In the year 1836, sixty-four patients were, on an average, taken in on each admission day.

The medical staff of the hospital consists of three physicians and three surgeons; one assistant-physician, one assistant-surgeon, a resident apothecary, an assistant-apothecary, a dispenser, and a surgeon-man.

The physicians and surgeons attend by rotation, so that one of each is at the hospital every day of the week except Sunday. Each surgeon appoints his own four dressers. The beds in the wards, with the exception of the accident and the convalescent wards, are divided among the several physicians as nearly equally as possible; each of the physicians having 55 beds, and each of the surgeons, on an average, about 93; making a total of 444, of which 75 are appropriated to venereal patients.

It is usual for the physician and surgeon in attendance on the general admission day, to select from among the patients those whom they chiefly wish to have under their own care, and having with these filled all the beds that are vacant in their own wards, then to select those which are best fitted to fill the vacant beds of their colleagues. Accidents are admitted at all times, and are placed in one of the accident wards (of which there are two). Each case is immediately attended to by the dresser of the ward, who resides in the hospital, and is in constant attendance, and has usually another dresser with him, to act as assistant in case additional aid should be required. It is the duty of the assistant-surgeon to attend on all accident-cases whenever he may be called upon by the dresser of the week, and to operate whenever, in his judgment, an operation is required.

The visit of the medical officers is usually at one o'clock. The prescribed number of visits for each, is two in the week, but they are actually always more numerous, and are often made daily. Each visit usually occupies from an hour and a half

to three hours. When one of the principal physicians or surgeons obtains temporary leave of absence from the hospital, his place is for the time supplied by the assistant.

The duty of seeing and prescribing for all the medical in patients, on those days on which the physician or assistant-physician does not visit them, devolves on the resident apothecary, who thus takes charge of all patients not affected with chronic diseases. He goes round the hospital every morning, from half-past ten to one, and every night, between half-past eight and ten; and visits the more important cases as often as is deemed necessary. He also prescribes, in the first instance, for all such surgical cases as require medical attendance; and he is at once called in in every case of emergency. Besides these duties, he has to provide the necessary drugs and medicines for the consumption of the hospital; all of which are entirely under his control, and are ordered on his own responsibility. None of these are supplied by contract.

On the days of the non-attendance of any of the surgeons, his patients are attended to by one of his four dressers, who, in any case of emergency, sends for the assistant-surgeon, who is, for this reason, always required to reside in the immediate neighbourhood of the hospital. The rotation of duty among the dressers is as follows:—A dresser, on the taking-in day of his surgeon, takes charge of all the cases admitted by the latter into his own beds, and of all accidents during the week. During the next two weeks, he takes all the cases admitted into his principal's beds by the other two surgeons. The fourth week is again the taking-in week of his principal, and then another of his four dressers becomes dresser of the week, and goes through the same cycle.

The regular day for the performance of operations is Friday.

The constant and immediate charge of the patients is confided to the head nurses, or sisters; of which there is one to each of the 19 wards, and on whom the whole management of the ward depends. The sisters are now never selected from among the nurses; it has been found more advisable to choose them from among the class of shopkeepers or head-servants in gentlemen's families, than to promote the nurses who are subordinate to them.

To each ward there is one day nurse and one night nurse, or watcher.

The out-patients are under the care of the assistant physician and the assistant surgeon; the former of whom attends on the Tuesdays and Thursdays; the latter, on the Mondays and Wednesdays in every week. Persons desirous of becoming out-

patients, obtain letters by applying at the steward's office, which letters are required to be renewed after the patient has attended four times. In practice, however, these regulations are not strictly attended to; for whenever any one requiring assistance applies for it without a letter or ticket, the medical officer fills up the necessary form and prescribes for him at once. In all urgent cases the patients are desired to attend on more than the usual days, that they may be seen by their medical officer or by the apothecary; or, if necessary, they are at once, or at some early period, received into the hospital on the recommendation of the officer under whose care they are placed as out-patients. The assistant physician is usually occupied on each of his days of attendance from 11 till half past 3 or 4. The assistant surgeon sees, on an average, 350 patients in each week.

Besides these two classes of out-patients, some others are seen and prescribed for by the apothecary at his shop, and others, by the dressers on the days on which the medical officers are not in attendance. Advice is also given to midwifery out-patients by the lecturer on midwifery; and women in labour are attended at their own houses. The midwifery patients attend on Fridays.

The total number of cases treated in 1836, (a year in which, however, the number was more than one-fourth more than the average of the nine preceding years), was 46,674: of these there were

Patients discharged from the	
Hospital	3,025
Physician's (assistant) out-patients ..	11,404
Surgeon's (assistant) out-patients ..	19,870*
Midwifery out patients (including 151 women attended at their homes during confinement)	1,451
Apothecary's out-patients	5,965
In-patients died during the year	298
Do. under cure, 31st December, 1836	428
Out patients under treatment, physicians'	302
Ditto, surgeons'	800
Ditto, midwifery	45
Ditto, apothecaries'	86
	<hr/>
	46,674

Medical officers and School.—The three physicians and three surgeons receive from the Hospital funds a salary of 40*l.* a year each, a remuneration manifestly very in-

* In this class, each patient is reckoned as a new patient each time of his attendance, and every casualty, of whatever kind, is included.

adequate for the services they perform. The institution of a medical school, in connexion with the Hospital, has the effect of adding to the emoluments of the medical officers; of furnishing, through the medium of the pupils, additional and gratuitous medical attendance on the Hospital patients; and, lastly, of imparting a medical education to the pupils themselves by lectures, illustrated during their personal attendance on the patients by observation of disease, and of the results of treatment. The emoluments arising from the pupils' fees for attendance on hospital practice, averaged, for the ten years preceding the inquiry, for each physician, 199*l.* 9*s.*; and for each surgeon (including the 200*l.* paid by his dressers), 448*l.* 3*s.* 6*d.*

The apothecary receives from the Hospital funds a salary of 300*l.* out of which he has to pay an assistant 50*l.* He receives also a guinea for each pupil who enters to the medical practice, and shares equally with the surgeons in the fees for attendance on the surgical practice: he receives also some small share of the fees paid by dressers, and of the payments of each pupil on entering to any course of lectures, which, altogether, makes his average income, during the last ten years, 644*l.* He has also a house provided for him in the Hospital, and is allowed to take an unlimited number of apprentices, but is debarred from private practice. The assistant apothecary receives 50*l.* a year from the apothecary, and 50*l.* from the Hospital funds. The assistant physician receives nothing for his services. The assistant surgeon has a sum of 150*l.* yearly towards the rent of his house, which is required to be in the vicinity of the Hospital.

The dressers are selected by the principal surgeons, and each pays a fee of 50*l.*, if he enters for a whole year, and of 30 guineas if for six months only. They are recommended to attend the hospital practice for six months previous to commencing their duties. They usually "take their box," (as this is termed), at the end of their second year of study in the school. Their duties are similar to those of dressers at the other hospitals; and each has, for his own week, to perform the duties which in some hospitals devolve upon the house-surgeon.

The appointment of the physicians and surgeons, and the assistants, are made by the general court; and those of the apothecary and his assistant by the committee. With reference to the former, it is remarked (and this remark is of course intended to be applied to the same system of election in the other large hospitals,) that many of those who vote are doubtless sensible of the weighty responsi-

bility they are under to avail themselves of all means within their power of ascertaining the respective merits of the several candidates; but when we consider that the far greater part of the governors cannot themselves possess the knowledge requisite to decide on the relative competency of the rival candidates, and have not the leisure nor the opportunity to obtain it; that, conscious of their incapacity in this respect, they are probably guided in the matter by the opinion of the treasurer, or some other influential governor, if not by personal favour or connection; and that the task of selection being entrusted to many, the responsibility is so divided as to have little influence on the result, it will not be thought extraordinary that, though no evidence whatever was adduced, nor, indeed, was likely to be adduced, of the election of absolutely incompetent and unskilful persons to fill these situations, the medical officers examined were almost unanimous in opinion that an alteration in the mode of election would be a material improvement in hospital administration. A difference of opinion prevailed as to the kind of change that was advisable; some thought that the French system of *concours* itself might be advantageously introduced, at least in the election of lecturers (who are now appointed by the treasurer, on the recommendation nominally of the medical officers, but sometimes without even that), and that all hospital appointments whatever should be made only after an efficient examination, according to the French system, in public. Some were decidedly of opinion that all hospital appointments should be upon a public competition, open to all persons possessing certain qualifications, and that the candidates should be examined by a board composed of the principal physicians or principal surgeons (as the case might be) of all the London hospitals; others suggested, as a great improvement on the present system, that all such appointments should be made by a medical council, composed of the medical officers of the hospital in which the vacancy existed, and of some other London hospital; or, at least, that such a council should possess the power of nominating two or three parties, from whom the governors themselves might make their own selection.

Such alterations as these, however valuable, are not likely to be adopted voluntarily by the governors; and if thought to form a proper subject for the interposition of the legislature, should perhaps be considered only as part of a more extensive plan for the improvement of the management of these institutions, and the advancement of medical science.

With respect to the appointment of

dressers, who are chosen by the surgeons from among any who enter their names for the office, and not merely on account of their superior qualifications, it is said—These circumstances appear to give weight to the opinion, that the dresserships at least should be open to public competition; that certain qualifications should be required; and that the candidates should be publicly examined by competent parties.

The other officers of this hospital are—the treasurer (Abel Chapman, Esq.); he has a house in the hospital, but no salary; he exercises a general control and superintendence over the hospital, and all the officers and servants, and may be considered in this respect as the executive officer of the committee.

The minister, who is the parish priest of St. Thomas's; and the chaplain or hospitalier (the Rev. J. Tuson), whose duties are entirely confined to the chapel and hospital wards, and who has no other spiritual charge, nor any connected with the parish or parish church of St. Thomas.

The law-clerk, Mr. R. A. Wainwright, acts as secretary and solicitor to the hospital. The steward, Mr. W. Nash, has the whole internal management of the establishment, and the superintendence of the subordinate officers and servants, and all workmen employed within the building. The matron, Mrs. Savory, has the general superintendence of the female wards, and of the sisters and nurses, the former of whom she selects for the approval of the treasurer, and the latter of whom she appoints, and if necessary dismisses, herself. The receiver or accountant of the hospital, Mr. M. Ledger, receives and pays all money under the direction of the treasurer, and keeps the accounts of the hospital. The architect and surveyor, Mr. J. Field, has the charge of all the property in London and the neighbourhood. There are also a butler, cook, baker and assistant-baker, and porters.

Of the sisters of the wards, four receive 50l. a year each, and fifteen have 37l. a year. Of the day-nurses, five are paid 27l. a year each, and thirteen, 25l. Of the night-nurses, or watches, the salaries are for six, 22l. 2s. a year each; and for fourteen, 19l. 10s. each.

The report concludes—It is not to be denied that the general application of the funds, and the management of the hospital, are highly creditable to the authorities to whom they are entrusted, and that the benefits which the charity in its present state confers on the poorer classes of the community are very great. Such defects as exist appear to us to be incidental to the system rather than chargeable on the individuals by whom it is administered;

but while we feel that an alteration in the constitution of the governing body, and other matters connected with the improvement of this and similar institutions, may well deserve the attention of the legislature, we do not consider it within our province to suggest the precise amount or nature of the alterations requisite.

CAUSES OF THE SOUNDS OF THE HEART.

To the Editor of the Medical Gazette.

SIR,

PERMIT me to bring before the notice of your readers a physiological subject which is highly interesting, on account of its value in diagnosis. My object is to prove, that the sounds of the heart are caused by the valves, and the valves only; the question is still *sub-judice*; at least I have met with no public acknowledgment of the truth of my proposition, published in 1832, that the normal sounds of the heart are produced by, and depend upon, the tension of the valves.

The moment I read Laennec's assertion, that the second sound was caused by the auricles, I perceived that it was erroneous, as being inconsistent with the successive actions of the heart, acknowledged by physiologists from the time of Haller, and fully confirmed by experiments on animals, viz. that the auricles contract first, then, following continuously without any interval, the ventricles, and that subsequently there is a period of relaxation, or cessation of action, in each part, during the diastole,* between each systole. I was thus satisfied (from the repose of the muscle,) of the *impossibility* of the auricles having anything to do with the second sound, there being no action of either auricles or ventricles going on at the moment, for it was the time of relaxation of both.

Dr. Hope, in his first edition, p. 49, endeavoured to prove that this sound was produced by the "ventricular diastole," and "the blood shooting with instantaneous velocity from the auricles into the ventricles;" although, as he set out with acknowledging that the second

* During the diastole, the muscles are flabby, and yield to the pressure of a probe, whilst during systole they are felt to resist or rather repulse it. The heart being a forcing pump it is merely necessary to apply one hand over it, and the other to the pulse, to be satisfied that the beat of the heart ("impulsion") depends upon the firm bulging of the muscles in systole.

found takes place at the moment that the auricle is relaxed, the blood at that time could be only flowing into the ventricle gently, from the veins, through the auricles, as it always does at that time; for the ventricles are partly filled in this way, before the auricles (which are never empty) inject the blood into them, so as to stimulate them.

It was evident to me that there was no cause in existence at the moment to produce the sound, except the tympanic collision of the ventriculo-arterial (sigmoid) valves; or in other words that the sound was entirely valvular; and having established that cause as "sufficient" for the second sound, I ventured (upon the Newtonian principle) to assert it as the cause of the first sound, and can prove it to be so, the difference in form of the auriculo-ventricular valves and surrounding attachments accounting for the slight difference in duration and tone of the sounds.

These opinions, which I had discussed with friends and pupils, appeared to me such self-evident propositions, that, until I found Dr. Hope and others labouring to establish erroneous explanations, I did not think it necessary to publish mine. At last I made them the subject of a communication to the Hunterian Society, 9th Feb., 1832, together with some practical observations, to show that pathological alterations confirmed my explanation; this was published in the *Lancet*, 19th May, 1832, and afterwards in the *Med. Chir. Review*.

Dr. Hope instituted a number of experiments, as is well known, with the endeavour to support his opinion, that both the first and second sounds were caused by the "motion of the contained fluids," "the vibratory collision thus occasioned amongst the particles of blood producing sound." This cause, however, he relinquished for the "bruit musculaire;" and at last he was compelled to acknowledge, in his Appendix, 1835, that the cause of the first sound might be "possibly partly valvular."

In the new edition of his work, published last year, he still adheres to the opinion of 1835, except that he quite acknowledges that the first sound is not merely "possibly," but actually partly valvular; but he coincides with the opinion of the London Committee of the British Association for the Promotion of Science, respecting bruit musculaire.

Now I contend that the first sound, as

well as the second, is entirely valvular, and deny that any part depends upon muscular noise, ("bruit musculaire") for when there is simple hypertrophy (increase of muscle and muscular action,) there is diminution of sound, although more of the condition necessary to bruit musculaire: this contradicts his opinion and confirms mine, inasmuch as it is the valves being encroached upon, and their having less blood to stretch them, which prevents their producing the usual sound. Again, when there is moderate hypertrophy, with proportionate dilatation, there is not appreciable increase of sound, though, if he were right, the quantity of muscle being increased, there ought to be increase of sound. My explanation accounts for the sound here remaining the same, as the valves are in their usual relative condition. Again when the heart is enormously enlarged by hypertrophy and dilatation, in which case there ought to be enormous first sound (if bruit musculaire were a cause) there is none, or scarcely any, because the openings are so dilated that the valves cannot act: thus we have pathological confirmations of my opinion.

In his last edition, 1839, he endeavours to shew that he was not ignorant of the valvular theory in 1830. He does not, however, understand it yet; he speaks of the valvularity of the second sound being confirmed by his experiments, as if he had not been labouring to upset it by his experiments, and as if I had not published the valvular theory in opposition to him, when he was experimenting to establish the erroneous hypothesis which he afterwards relinquished: his successive publications prove the fact. He says (page 13). "that the sound was *not* attributable to the retrocession of the semilunar valves, I entertained a strong presumption." What was to have prevented him as well as myself from having a perfect certainty that it *was*?

I proved the *impossibility* that the second sound could proceed from any other cause than the valves, and Dr. Hope had exactly the same data to reason upon.

In his chapter headed "ERRONEOUS THEORIES," Dr. H. states that my theory of the first sound was imperfect, because I do not add the bruit musculaire: this I deny: the valvular "cause" is "sufficient." I have accounted for the differ-

ence of sound by the difference of shape of the auriculo-ventricular valves; their attachments are different, they are set in stronger rims, the sigmoid valves are merely attached in a tube, as it were, whereas the auriculo-ventricular have a firmer and different attachment to the parietes of the ventricle, which being in systole at the time of tension, altogether a flatter and longer tone is produced. Again, and above all, there is no sound when there is plenty of muscular action from hypertrophy, because the valves cannot act; hence necessarily it is the valves, not the muscles, which produce sound.

Having been the first to publish the valvular explanation of the sounds, I am bound to confute the assertion of Dr. Williams, "that I hold the same opinion as that in print by Dr. Elliott, and of which he says I was a *later* advocate;"* the fact being, that I proved the second sound to depend on the *tension* of the *valves*, produced by the backward pressure of the blood from the *arteries*; whereas Dr. Elliott asserts, that the second sound depends upon the *blood flowing* from the *auricles*, which he even puts in italics; so that my demonstration is, that the sound is caused by the *valves* in *holding* the blood on one side of the heart, whilst the "opinion" of Dr. E., on the contrary, is, that it is caused by the *blood flowing* in on the opposite side, and he uses the word "verrit" as expressive of the sound produced by sweeping or brushing along. Again, so far from attributing the second sound to anything but the rushing of the blood, he (following Dr. Hope) attributes the sudden nature of that sound to the rapid and vehement (as if relaxation could be vehement) diastole of the ventricle; and its abrupt termination ("*abruptum*" in italics) to the instantaneous impediment which the sigmoid valves offer to that motion of blood to which alone he refers sound: thus the only allusion he makes to the valves is, not as producing, but as cutting short the sound, and so far from considering the valves to be the cause of sound, he is evidently puzzled, (as we may infer from the expression "fatendum est,") to account for the sound ceasing when it does, "though the blood continues to flow into the ventricles

after the sound has stopped," which my explanation of valvular sound renders perfectly clear: the passage shews that he looked only to the flow of the blood, and not the valves, as the cause of the sound. In fact, so far from originating the opinion of the sound depending on the valves, he does not advance that as his opinion, and in his thesis there is no originality, but a professed compilation and adoption of the opinions of others—Hope, Williams, &c.

The following is the passage from Dr. Elliott's thesis:—"Nobis igitur (me iudice) concludendum est, sanguinem a ventriculis agitatum et in arterias immisum, primum sonum cordis efficere: secundumque a sanguine pendere in ventriculos, dum horum fit diastole, ex *auriculis* influente. Hoc plane confirmatur a phænomenis quæ in vitis valvularum cordis observantur. Naturam soni secundi *subitam* et *abruptum* oriri credo a diastole ventriculorum tam repente et vehementer inchoatâ ut sanguis vi magnâ auricularum parietes transcurrat: nec non ab impedimento quod in corpore sano fere instantur valvulæ præstant sigmoidæ sanguini, qui in ventriculos, dum horum fit diastole, ex arteriis vult refluere. Post sonum secundum quidem fatendum est adhuc plus sanguinis ventriculos inire: hic autem, ut annotat Hope, ventriculorum parietes (jam multo fluido distentos nec ultra ab illo fricatos) haud verrit, sed cum sanguine jam illic congesto, sese in silentio commisceet nec aliquid interea soni ab auriculis editur, quippe quæ sanguinem quem impellunt accurate usque sequuntur. Motum igitur sanguinis, tam a diastole quam a systole ventriculorum effectum, sonorum cordis præcipuam esse causam erendum est: quod ab observationibus quibusdam Doctorum Bertin, Williams, et Hope, singulari in modo confirmatur.

The London Committee of the British Association, appointed to investigate and report upon the subject, appear to agree with me as to the second sound, but make the unphilosophical addition of bruit musculaire to the true cause of the first. (See Med. Gazette, Dec. 10, 1836, and Dec. 2, 1837.) I say they appear to agree with me, so far as acknowledging the valves to be the cause of sound, but they do not seem to understand the true principle, which is, that it is the tympanic tension which produces the sound. I judge from the

* Lectures on the Physiology and Diseases of the Chest, &c. &c. By Charles J. B. Williams, M.D., F.R.S.—Medical Gazette, July 1838.

expression in the report, that "it is impossible that the auriculo-ventricular valves should close with a *flap* in the same way as the sigmoid valves." They speak as if the surfaces of the valves flapping together produced the sound, like the click of a solid valve, and Dr. Todd, one of the committee, in republishing this opinion in the *Cyclopædia of Anatomy and Physiology*, (article Heart, p. 616,) misrepresents my statement, saying that the first sound is referred by me to the rapid *approximation* of the auriculo-ventricular valves; than which nothing is farther from my opinion, which is, that both first and second sounds depend solely on valvular tension, and he gives his own version, not a translation of the above passage, in Dr. Elliott's thesis, referred to by Dr. Williams, his colleague in the last committee.

I will not attempt to take up any more space of your valuable journal by repeating arguments respecting the circulation, &c., or the true cause of impulsion, which I have published elsewhere (vide my *Principles of Medicine*, &c.), in opposition to errors arising from their authors having neglected to make themselves acquainted with the very rudiments of physics. A correct knowledge of the nature of the normal sounds of the heart is of the utmost consequence to diagnosis, inasmuch as every aberration is the more easily detected and accounted for. I have read that, through pathological observations, Dr. Carswell arrived at the same opinion as myself respecting the second sound; the road, though circuitous, led to the truth, and I feel happy to have the concurrent testimony of a person of such acknowledged talent.

I have the honor to be, sir,
Your obedient servant,
A. BILLING.

Bedford Place, 20th March, 1840.

NEW OXYHYDROCARBON.

To the Editor of the Medical Gazette.

SIR,

I TAKE the liberty of communicating the properties of a new *oxyhydrocarbon*.

Some time since I had given me by Mr. Whipple, chemist to the firm of

Barron and Co., a specimen of a crystalline matter which was spontaneously deposited from the essential oil of bitter almonds. Mr. Whipple not having before observed such a deposition, regarded it as an extraordinary product, and sent a sample to Professor Faraday, who thought it might be benzoic acid. On examination, however, I find it to be a new compound of oxygen, hydrogen, nitrogen, and carbon. The following are a few of its properties:—

It occurs in small acicular crystals of a bright straw yellow colour, having the odour of bitter almonds, and are free from taste. When heated they fuse, but are not sublimed, producing an amber-coloured oily liquid; heated to redness they are decomposed, leaving a carbonaceous residue. The crystals are perfectly insoluble in water, alcohol, or ether, whether cold or boiling. Boiled in dilute nitric acid they dissolve, forming a solution which is precipitated yellow by ammonia, and yellowish white by tannic acid. Strong sulphuric acid forms with them an orange yellow solution, precipitated yellow by alkalis, and is rendered carmine red by the salts of iron. Boiled with a solution of perchloride of iron, there is produced a carmine red liquid. Heated with potash they do not give out ammonia.

By their insolubility in alcohol, and non-susceptibility of sublimation, they are at once distinguished from all the substances likely to be met with under these circumstances—viz. amygdaline, benzoic acid, benzamide, and benzoin. Its characteristics are its being rendered orange yellow by sulphuric acid, and carmine red with perchloride of iron.

It appears to be a compound of carbon, hydrogen, oxygen, and nitrogen, united so as to form a bicyanide of benzule, and is produced by the oxydation of the hydrogen of two equivalents of hydrocyanic acid and the one of hyduret of benzule of the oil of bitter almonds; its symbol, therefore, will be, $Cy^2 + Bz$; and equivalent, 157.

I am, sir,
Your obedient servant,
H. LETHEBY.

116, Britannia Street.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

On the Influence of Artificial Light in causing Impaired Vision, and on some methods of Preventing or Lessening its injurious Action on the Eye. By JAMES HUNTER, M.D. Surgeon to the Eye Dispensary of Edinburgh. Edinburgh, London, and Glasgow, 1840. 8vo. pp. 94 and a plate.

ONE of the first effects of the improper use of artificial light, says Dr. Hunter, is sub-acute or chronic inflammation of the lining membrane of the eyelids. The next symptoms are those of incipient amaurosis; and two-thirds of the cases of this disease “occur in those who use their eyes very much by artificial light, particularly persons belonging to the following classes of society:—1. Literary men, students, clerks, transcribers, composers, and others much engaged in reading or writing at night. 2. Tailors, sempstresses, and shoemakers. These persons generally work late at night, and often are obliged to use artificial light, even in the day time, in consequence of the frequently obscure, and almost under-ground situation of their places of business, which often are very ill ventilated, and oppressively warm. 3. Engineers, stokers, enamellers, glassblowers, and other persons much exposed to the combined action of intense light and heat,” p. 24.

But why is the light of candles more injurious than the rays of the sun? This question is answered by our author in his second chapter.

Newton showed that a beam of white light might be divided into seven prismatic colours of red, orange, yellow, green, blue, indigo, and violet, but more recent experiments have shown that there are only three primitive colours, namely, red, yellow, and blue; the others being formed by mixtures of these. Mr. Field has found that a beam of day-light is composed of red, yellow, and blue rays, in the several proportions of 5, 3, and 8. “The heating power of light varies with the colour of it, as is shewn in the following table by Sir Henry Englefield, which exhibits the heights of thermometers placed in the different rays composing a beam of white light.

	Rays.	Degrees Fahr.
In the	{ Blue,	{ 56
	{ Yellow,	{ 62
	{ Red,	{ 72
	the thermometer stood at	

Therefore artificial light, by containing an excess of red and yellow rays, will have a greater primary heating effect in proportion to the illuminating power of it than common day-light.” p. 38.

On the other hand, “In common artificial light there always is an excess of the yellow and of the red rays, which give it more or less of an orange or yellow colour, according to the way in which the light is arranged, and according to the substances from which it is procured. The purest ordinary artificial light is obtained from different materials in nearly the following order. Oil-gas—Naphtha—Sperm-oil—Coal-gas from the best parrot-coal—Wax, Spermaceti, and Stearine Candles—Vegetable Oils—Moulded Tallow Candles—Coal-gas from inferior coal, such as is used in London—Course Oils and Dipped Tallow Candles.” p. 31.

This excess of red and yellow rays injures the retina, and it “becomes less sensible to those rays that are in excess, so that afterwards, when it views a white object by daylight, the blue rays contained in the white light reflected from the surface of it make a greater impression than the red and the yellow rays, and the object appears more or less of a dingy blue or purple colour, as illustrated by the experiment described in the introductory part of this treatise. This dark blue or purple tinge is *complementary* to the orange or yellow colour of the artificial light.

One colour is said to be *complementary* to another, when the addition of it to the latter completes the chromatic triad necessary to form white light. Thus, green is complementary to red, because green is composed of yellow and blue, which united to red make white light; so blue is complementary to orange, which is composed of red and yellow; and purple, which is formed by a mixture of red and blue, is complementary to yellow. Whenever the eye is long exposed to light of one colour, it becomes partially insensible to it, and sees the opposite or complementary colour. Thus, if a person look at the sun through a dark blue glass, and then regard a white surface, it will appear

orange; had the glass been red, the surface would have appeared green, or green if the glass had been red, and so on. * * * Although all kinds of coloured light may prove injurious to the eye by stimulating it unequally, some are much more hurtful than others. An excess of blue light is least injurious; then bluish green, green, yellowish-green, yellow, orange, and red, in the order here given. In good artificial light, the yellow rays are in much greater excess than the red ones; but, on the other hand, the red rays are comparatively more hurtful, in consequence of their greater force and heating power." p. 35.

But besides the injury caused by the defective chromatic composition of artificial light, its indirect heating power, the carbonic acid gas which is formed during its combustion, and its unsteadiness, and generally bad position, add to its destructive force.

The third chapter contains the prognosis and treatment of amaurosis; they are somewhat scantily given, as the book is intended for the public, but are good as far as they go.

In the fourth chapter Dr. H. treats of the choice of artificial light. He discusses the comparative advantages of olefiant gas, naphtha, oil-gas, parrot and cannel coal-gas, sperm and fine oils, Parker's hot oil-lamp, wax and other other candles, and Palmer's candle-lamps. The first on the list is the best, but is too expensive for ordinary use. Our author approves of the light of gas, provided the gas is made as at Edinburgh, of parrot or cannel coal, and not, as in London, of common coal. He allows that gas-light has done more injury to the eyes of thousands than any other kind of light, from the enormous quantity in which it is used, "producing a flood of light in the remotest corners of apartments (where the sight is to be exerted on fine work, for hours at a time, and night after night), where there is hardly so much as a single shady spot towards which the exhausted eyes can be turned for relief during any temporary relaxation; whilst at the same time, it heats the surrounding air to a most injurious degree, and poisons it with carbonic acid. Thus the cheapness of gas-light leads to its abuse; but its other advantages, viz. the facility with which it may be placed in any re-

quired position, and increased or diminished in intensity according to the nature of the work, are also too often abused; by having the light placed close to the eyes, without any opaque shade to intercept the extraneous rays that obscure the distinctness of the picture on the retina; or by employing a stronger and stronger light in proportion as the sensibility of the optic nerves becomes impaired, to obtain a present, though temporary relief, with the certainty of ultimate permanent injury to the sight." p. 71.

Chapter the fifth and last treats of the prevention of the injurious action of artificial light. For this purpose four expedients are recommended. The *first* is that of improving the colour of the light by adding the primary rays which are deficient, or absorbing those which are in excess. Thus, a conical reflector, the inside of which is painted of a sky-blue colour, may be placed over the light; or the light may be transmitted through a solid or fluid medium of a pale blue colour. The former of these methods is the best; and a mixture of ultra-marine and Prussian blue gives the necessary tint to the reflecting surface. Blue spectacles are not to be recommended; "as, from the greater warmth of the absorbed rays, they become hot and uncomfortable; and, from the loss of light they occasion, they require to be removed when the eye is turned for a moment to any other object than that on which the light is concentrated." p. 76.

But supposing that the person was obliged before to wear spectacles to aid his sight, it seems to us that theoretically the addition of the blue tint ought to cool the hot red and yellow rays as they pass through.

The *second* is to diminish the heating effect of artificial light by making its rays pass through water. This is to be done chiefly when a very strong light is required, as in engraving. The dryness of the air caused by combustion is to be obviated by ventilation, and, in some cases, by evaporation of water.

The *third* expedient is to prevent the bad effects of the carbonic acid gas by proper ventilation, and by regulating the combustion so as to obtain the greatest intensity of light with the smallest consumption of materials. When many persons are crowded into a small space,

with much artificial light "great advantage is derived from having a metal tube with a funnel-shaped extremity placed over the lights, as represented in fig. 3, and communicating either with the open air, or with a chimney. By such an arrangement the carbonic is removed as soon as it is formed, and the air of the apartment kept cool and comfortable, especially if care be had to enclose the ventilating tube in a case of wood or leather, or some other bad conductor of heat." p. 84.

The *fourth* expedient is to use shades. They may be attached to the light, or worn by the person whose eyes need protection. The former method is to be preferred. Our author does not agree with Sir David Brewster that ground glass shades are actually hurtful, but thinks that their advantages as a protection to the eye are greatly overrated. When the light hangs from the ceiling, about forty degrees above the eyes, no opaque shade is required. "But when the light is placed lower down, as when a common table lamp is used, the eyes of those sitting round it should be protected by having a shade of some opaque substance in the form of a circular band, of about four inches in breadth, placed round the circumference of the ground glass moon, as recommended by Dr. Arnot; and which allows a brilliant light to fall on the table, whilst the rays that pass upwards to the ceiling and upper part of the walls being reflected, diffuse a sufficient and very agreeable light in the rest of the room." p. 88.

After all, however, the best way of preserving the eyes is to adopt a more rational system of life. "This is a subject that is too little attended to at present; for the very late hours to which shops and other places of business are kept open; the ridiculously late period of the night to which our public amusements are protracted; with the bad example of our legislative assemblies sitting in debate till long after midnight; are customs which being productive of much evil, should be discouraged as much as possible." p. 89.

Dr. Hunter's Essay is very useful, and though written for the public, will be advantageously consulted by medical practitioners.

MEDICAL GAZETTE.

Friday, April 3, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso." CICERO.

INSTITUTIONS FOR SPECIAL DISEASES.

It is evident that two widely different principles prevail among the members of the profession with respect to the method in which its multifarious labours should be divided; and of these the one is entirely practical, the other as eminently theoretical. While one party are daily lauding and endeavouring to propagate their opinion, that all distinctions should be merged in one single Faculty, of which every member's acquirements should be as multiform as their diplomas were simple and uniform, another are daily adding to the list of those who step from the general wide paths of professional practice, to cultivate and reap the profits of some single little tract, to which, by its real or apparent degree of fertility and usefulness, they may attract the attention of the public.

Neither of these parties, indeed, includes much more than a small portion of the profession, though, strange as it may seem, a few members are advocates of the principles of both; theoretically upholding the propriety of a single faculty, while they practically support the most minute division of professional labours. It is not our purpose at present to consider the question of the fusion of medical distinctions, for it has already occupied our attention on several occasions, and on the whole the present prospects of its advocates are not such as to give its opponents any cause for anxiety. We propose, however, briefly to consider the practice which is now so extensively prevalent, and apparently

increasing, of separating from the general practice of the profession, or of any of its main branches, to pursue some single object—the diseases of some one organ, or of some one class or nosological division; and by the erection of special hospitals or infirmaries for the patients of that one favoured disorder, to obtain an undue share of public attention and sympathy for them, and ultimately (that which often too evidently forms their main object) a monopoly of public patronage for the originators of the schemes.

There are evidently certain maladies which it is not only fair, but useful or necessary, to make the subject of special and almost entire study. Mental diseases are usually regarded as such, the custom of the profession having long consigned them, whenever it has been possible, to the charge of the few who will devote their whole time and attention to their management. In like manner the peculiar nature of their disease renders the exclusion of lunatics from general hospitals in the highest degree desirable; and special institutions for their care must ever be objects deserving a large share of public support. Reasons scarcely less cogent will fully authorize the establishment of hospitals for some distinctly contagious diseases, as small-pox. But as to typhus, we must say that except on the occasion of an unusually extensive epidemic, in which the cases would be so numerous in the general hospitals as to endanger the rest of the patients, we are far from convinced of the necessity, or even of the utility, of separate establishments.

A class scarcely less requiring special consideration are obstetric cases; and for these the usual customs of the several lying-in hospitals and dispensaries, with which attendance on lying-in women at their own houses is conjoined, accomplish that which the best

judgment might have suggested as most desirable. It is gratifying also to observe, that (as far as our own knowledge extends) the officers of all these establishments are gentlemen fully calculated, by a general medical education, for the charge which they undertake—a charge which, however natural the process that they have to superintend may be, can rarely be held with safety, in the artificial state in which we live, by any one unacquainted with disease.

Next to these, as justifiable objects of special support and special professional study, we would place the diseases of the eyes; for in these, though they perhaps require, more than either of the preceding classes do, a nice and profound knowledge of the general principles of medicine and surgery, there is often required, besides this, an amount of tact and manual dexterity which few who obtain their experience of ophthalmic surgery only in the chances of common and general practice, can hope to attain. Besides, it both was, and is still, essential to give some peculiar encouragement and opportunity for the study of the diseases of the eye by professed general surgeons, in order to prevent them from becoming a monopolized field for non-surgical oculists; than whom, in the general, no more mischievous class of unauthorized practitioners can be found upon the borders of our territory. One can, probably, nowhere find a more marked example of the greater benefit that results from the grafting of these particular branches upon the great trunk of medical science, instead of endeavouring to plant them as slips and nurture them even in the most favourable soils, than we find in a comparison of the works of the surgeon-oculists of this and of other countries with those of the oculists not surgeons. The one have made this branch of surgery the first and fairest of the

whole; the others are but useless to the world and disgraceful to their authors, teaching nothing but how vain it is for any one to give even all his time and (it may by accident be) his talents, to the detail of any subject of which he is totally ignorant of the general principles.

We should be glad if we could find as much cause for approbation in regard to the separation of the treatment of affections of the ear, for which, in many respects, the same claims might be made as for those of the eye; and for which it might especially be urged, that a cultivation of them by accomplished practitioners would tend to withdraw their management from the hands of some by whom the science is neither honoured nor improved. There can be little doubt that a cultivation of the surgery of the ear, by the same class of persons as have so exalted the science of ophthalmic diseases, would rapidly tend to bring it from the darkness by which it is still obscured, notwithstanding the great advance that it has made by legitimate means within the last few years. But this, we feel assured, can never be effected, except by those who are strictly, and in the full meaning of the term, medical practitioners.

But here we believe the list of justifiable separations must be closed; it includes, we think, all the diseases to which any physician or surgeon can, with propriety, give his sole attention, and certainly all for which he can, with any justice, require the public to support special charitable institutions. As far as we know, the only claims that can be made for special provision for any disease, are either that those who suffer from it are excluded from general hospitals, or that they require the knowledge of practitioners of peculiar experience, or that in general hospitals their treatment is not considered suffi-

ciently important or interesting. By the first circumstance, maniacs and obstetric patients demand peculiar assistance; and besides these, there are a few other diseases—as venereal affections—for which, as it is the custom in some of the hospitals of the metropolis, to exclude these subjects from their wards, the Lock Hospital is not less justifiable than necessary. But for what other class, among the many for which separate hospitals are now got up, can any claim be made on this ground? Certainly it might be fairly urged for bad legs, with which few hospital surgeons are anxious to fill their beds, and with which hundreds of sufferers are therefore compelled to remain unassisted, and uncured, for the want of that rest which a hospital would ensure them. One may fairly ask—If bad legs were as common, and productive of as much suffering among the rich as among the poor, how long would it be before a hospital was erected especially for them, and a number of anxious candidates appeared to contest the privilege of curing them? Without any wish to cast a slur upon the honourable intentions of the gentlemen who are supporters of an infirmary lately started, under great and affluent patronage, it might surely be asked, how it is, that with charitable motives only to guide them, an establishment is to be founded for crooked rather than for ulcerated legs?

Already all such cases are as freely received and as efficiently treated in the general hospitals as they could be in a special institution; and, therefore, an infirmary for their management is unnecessary and uncalled for, and in consideration of the evil of further separation of the pursuits of members of the profession, is unjustifiable.

We must say the same of all special institutions for the treatment of diseases of particular internal organs; all these are received into general hospitals, and

are regarded in them as objects of equal and just interest; neither is there required for their management any knowledge more than it is the bounden duty of every practitioner to possess. Why, then, should funds be abstracted from general hospitals to maintain others especially for the reception of patients affected with any one disease? If more hospital relief is requisite, let additional hospitals for diseases in general be founded, and let them all dispense alike the advantages of medical assistance, and of medical education; but let not the sums which the public are willing to give be frittered away in the treatment of one disease while another remains comparatively or entirely neglected. Surely there can be no more propriety in an infirmary for diseases of the lower bowel than in one for diseases of the mouth or the stomach; or in one for the affections of the lungs than for the affections of the heart; or for the disorders of the skin than for those of the muscles; for curvatures of the spine than fractures of the skull; for distorted than for broken legs. All that we know of these disorders is based upon the knowledge of medicine and surgery generally; they can, therefore, be rightly treated only by those acquainted with the general principles of these sciences, and in the education of the student instruction in them should form a part of one general scheme of study. Their separation from the main trunks of professional practice, even when (as in all the cases we have already alluded to) they are studied by men of general medical education, is not less mischievous to the advancement and propagation of medical knowledge than it is unnecessary for the well-being of those who suffer from these diseases, and unfair to those who suffer as much from others which receive only their average share of attention.

ROYAL SOCIETY.

January 23, 1840.

Structure of Bone.

A PAPER was read, entitled "On the Structure of Normal and Adventitious Bone." By Alfred Snee, Esq., communicated by P. M. Roget, M.D. Sec. R.S.

On examining, by means of a microscope, very thin sections of bone, prepared in a peculiar manner, the author observed a number of small, irregularly-shaped, oblong corpuscles, arranged in circular layers round the canals of Havers, and also rows of similar bodies distributed around both the external and the internal margins of the bone. Each corpuscle is connected by numerous filaments, passing in all directions with the Haversian canals and the margin of the bone, and also with the adjacent corpuscles. He finds that the canals of Havers are vascular tubes containing blood. The corpuscles themselves are hollow, and their cavities occasionally communicate with those of the canals; their length is equal to about two or three diameters of the globules of the blood. They exist in cartilaginous as well as in osseous structures, and are found in every instance of adventitious bone, such as callus after fracture, morbid ossific growths either from bone or from other tissues; and the author has also ascertained their presence in the bony and cartilaginous structures of inferior animals, such as birds and fishes. Measurements relating to these corpuscles, by Mr. Bowerbank, are subjoined, from which it appears that their diameters vary from about the 10,000th to the 4000th, and their lengths from the 2300th to the 1400th part of an inch.

January 30, 1840.

On Single Vision.

A paper was read, entitled "Observations on Single Vision with two Eyes." By T. Wharton Jones, Esq. Communicated by Richard Owen, Esq., F.R.S.

The author animadverts on the doctrine which Mr. Wheatstone, in his paper on the Physiology of Binocular Vision, published in the Philosophical Transactions for 1838, p. 371, has advanced in opposition to the received theory of single vision being dependent on the images of objects falling on corresponding points of the two retinæ. He maintains that under these circumstances the two impressions are not perceived by the mind at the same instant of time, but sometimes the one and sometimes the other. If one impression be much stronger than the other, the former predominates over, or even excludes the

other; but still the appearance resulting from the predominating image is nevertheless in some manner influenced by that which is not perceived. He supposes that there are compartments of the two retinæ, having certain limits, of which any one point or papilla of the one corresponds with any one point of the other, so that impressions on them are not perceived separately; and considers that this hypothesis, combined with the principle above stated, is required, in order to explain the phenomena in question.

February 6, 1840.

Corpuscles of the Blood.

A paper was read, entitled "Observations on the Blood-corpuscles of certain species of the Genus Cervus." By George Gulliver, Esq. F.R.S. Assistant Surgeon to the Royal Regiment of Horse Guards.

The author has found that the blood of the Muntjac*, the Porcine†, and the Mexican Deer‡, contains, together with corpuscles of the ordinary circular form, a still larger number of particles of less regular shape; some curved and gibbous in the middle, and acutely pointed at the ends, with a concave and convex margin, like a crescent; others approaching more nearly to segments of a circle; some shaped like a comma, being obtuse at one end and terminated by a pointed curve at the other; others having an acute projection of the convex part, so as to constitute a triangular, or even quadrangular outline; some having the figure of the head of a lance; while a few presented a double or sigmoid flexure, as if they had been twisted half round at the middle. Like the ordinary blood-discs, these peculiar corpuscles are deprived of their colouring matter by water; but with only a small quantity of water they quickly swell out, and assume an oval or circular figure, forming long bead-like strings by the approximation of their edges. In saline solutions they become rather smaller, but preserve their figure tolerably well.

In an appendix, the author gives an account of his observations of the blood-corpuscles of a new species of Deer, inhabiting the mountains of Persia, of which a specimen has been lately received by the Zoological Society. Many of these corpuscles presented the singular forms above described.

* Cervus Reevesi. † C. Porcinus.

‡ C. Mexicanus.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY,

March 24, 1840.

SIR B. C. BRODIE, BART. IN THE CHAIR.

On the Structure of the Human Placenta and its connexion with the Uterus. By WILLIAM BLOXAM, M.R.C.S., Surgeon to Queen Adelaide's Lying in Hospital, and Lecturer on Midwifery at the School of Little Windmill Street.

THE author commenced this paper by a description of the appearances furnished by an examination of a uterus thirty hours after delivery. The uterus having been freed from its blood by gentle agitation under water, presented the following appearances. Its volume equalled that of the gravid uterus at four months; its internal surface exhibited the muscular fibres in rounded bundles, somewhat resembling those of the *carneæ columnæ* of the heart, except at the upper and back part on a circular portion, about six inches in diameter, where the placenta had evidently been attached.

At this part it was covered by a fine flocculent membrane, in which numerous openings of various sizes, with regular edges of an elliptic form, might be observed by turning it about carefully with the point of a fine needle. These openings led by regular channels to the surface of the uterus. Many of the openings were large enough to admit the little finger. At the bottom of these channels apertures of an elliptic, or sometimes of a semilunar, form were seen in the uterus, leading obliquely downwards into the sinuses of the organ. These openings were from two to four lines in diameter.

On looking through them, another class of orifices might be seen in the subjacent layer of muscular fibre; of the same shape, but less in size, also leading obliquely downwards into the sinuses of the uterus.

On laying open one of these large sinuses it was observed to be triangular in shape, the base being opposed to the outer wall of the uterus, and the veins of the uterus descending from the apertures above described, entered it at each posterior angle in pairs at intervals of from five to six lines asunder. These sinuses were continuous with the hypogastric vein, and were lined by a smooth membrane, apparently similar to that of the great veins of the trunk.

On examining the uterine surface of a recent placenta, it was stated that a considerable number of orifices of various sizes were to be shewn by inflation, and a cast of a placenta in white wax, with the edges of these orifices defined by black varnish,

was exhibited. They were found to vary in size and shape, some being circular but small, and the other larger and semilunar. The channels from these last-named orifices penetrated the organ obliquely, and extended into the interstitial structure of the placenta.

The obliquity of the canal rendered the semilunar fold of membrane, of which the orifice was formed, valvular in its appearance, and probably its function might be to resist the passage of blood from the uterus to the placenta in that direction. Indeed, from injections which had been made, the author had reason to believe that such was the fact; for a specimen was shewn, taken from a woman in the sixth month of pregnancy, in which the arteries of the uterus had been injected with red-coloured size, and the veins with blue. On opening the uterus, both systems of the organ were found to have been freely penetrated by the injection; that only, however, had reached the placenta which had been thrown into the uterine arteries.

In the same preparation were seen the vessels known by the name of the curling arteries of Hunter, making a sudden turn, and dipping at once into the substance of the placenta, at the spongy tissue of which they ramify minutely; so much so, that the surface appears of a uniform red colour, except when viewed under high magnifying power.

From these and other detailed observations, the following conclusions were deduced:—

1st. That the blood enters the placental system by means of the numerous slender arterial branches of the so-called curling arteries. That the number and minuteness of these arteries is peculiarly calculated to prevent the force of the circulation from being suddenly exerted on the placental system.

2nd. That the blood (or its nutritious principle) so introduced into the placenta is conveyed into these umbilical veins, which are in contact with the terminations of the uterine arteries, it may be either by secretion or by endosmose and exosmose.

3rd. That the blood having thus entered the body of the fœtus, is returned to the placenta by the umbilical arteries; by the free extremities of which either it, or some principle prejudicial to the child, is conveyed into the interstitial structure of the placenta, and thence, through the semilunar openings of the uterine surface, enters again the maternal circulation.

The author concludes by drawing attention to the mode adopted by nature for the prevention of uterine hæmorrhage, which is peculiarly provided against by the circumstance of no two of the elliptic openings in the inner surface of the uterus

being placed exactly on the same meridian; and also, that the flocculent membrane (decidua), which was described as attached to the part of the uterus from whence the placenta had separated, was well suited to entangle the blood in its tissue, and thereby to favour its coagulation.

Wound of the Throat.

A paper was then read by R. A. Stafford, Esq. Surgeon to the Marylebone Infirmary, detailing the symptoms and treatment of a maniac, a servant out of place, who had cut the larynx in full one half of its circumference with a razor; and who after the wound had been dressed by another surgeon, was brought by a policeman to the Marylebone Infirmary. The patient, in a recurrence of maniacal excitement, reopened the sutured wound, and enlarged it into the pharynx with a blunt knife. Food given passed out by the opening of the pharynx, and he was fed by a tube introduced into the œsophagus. The history begins on the 21st October, 1839, and the wound was completely healed on the 9th December following; but the voice of the patient was lost, and he could only speak in a whisper.

PATHOLOGICAL DEPARTMENT.

THE first meeting of this new branch of the Society was held on Tuesday, March 17, and was numerously attended.

The general purposes of this department will appear from the following memorandum, suspended in the library:—

BY ORDER OF THE COUNCIL.

1. General meetings of the Society shall be held on the third Tuesday evening in March, and the first and third Tuesday evenings in April, May, and June, 1840. These meetings are to commence at half-past 8, and not to extend beyond 10 o'clock.

2. At these meetings, members may bring under the notice of the Society, specimens recent or prepared, drawings or casts of morbid structures, accompanied by a description of the appearance, and a short history of the case.

3. Such members as are desirous of an authentic record of this statement being preserved must previously furnish the Secretary with a copy of it in writing; whereby the Council may also be enabled to decide on the printing of it in the Society's Transactions.

4. Specimens received shall be exhibited in the order in which they have been delivered at the Society's rooms; but precedence shall be given to those which previously to delivery have been announced to the Secretary. The order of such announcement shall regulate the order of precedence.

5. No recent specimens can be received at the apartments of the Society until half-past 7 o'clock in the evening of the day on which they are to be exhibited; and these recent specimens must be removed from the premises of the Society before 10 o'clock in the forenoon of the day following.

The Committee for regulating the proceedings of these meetings have resolved, "that at the meetings the oral method of description should be preferred."

HENRY LEE, *Secretary*.

March 16, 1840.

Owing to a mistake, we received no report of the first meeting, and the account we subjoin is taken from the *Lancet*, with a few corrections made for us by a member who was present.

Contused Artery.

Mr. Arnott showed a preparation and drawing exhibiting a peculiar condition of the humeral artery, consequent upon injury. A man was admitted, late at night, into the Middlesex Hospital, with five or six of his ribs broken, and a compound fracture of the left ulna, in consequence of the passage of a cart-wheel over him. The house surgeon did not deem the latter injury to be a serious one, and subsequently alleged that the pulse at the wrist was then perceptible. The following day (2d of October) Mr. Arnott saw the patient. The wound of his fore-arm was not considerable; the bone was not comminuted; the temperature of the hand was natural, but no pulsation could be detected in either the radial or the ulnar artery. The limb was attempted to be saved. The following day the temperature remained unaltered. On the 4th, the limb exhibited signs of mortification, being livid, mottled, and insensible: it was, accordingly taken off forthwith.

On examining the humeral artery, this was found about three inches below the seat of amputation, to be enlarged to a considerable size, and to be gorged with blood, which acted as an obstructing clot. The cellular coat was entire, while the inner and middle coats divided circularly, as if by a ligature, were, beyond this, separated from the cellular, and the two former still preserving their adhesion to each other, and their cylindrical form entire, were turned down and fairly inverted into the canal of the vessel further on; thus forming an additional cause of obstruction. Mr. Arnott had thought the case to be *unique*, but had recently learnt that one somewhat similar had occurred in the Birmingham Hospital, in a patient of Mr. Hodgson, who met with a compound fracture of the leg, and died, some weeks after,

of phlebitis. Soon after the accident, it was observed that there was no pulse at the left wrist, and, on examining the axillary artery after death, there was found in it an obstruction depending on the same causes as were observed in Mr. Arnott's case; the cellular coat being whole, the middle and inner coats divided, and these two adherent and inverted as a cylinder into the vessel beyond.

Mr. B. Phillips believed that two cases of a similar kind were recorded in the *Edinburgh Medical and Chirurgical Transactions*, by Mr. Turner. In one case, violence had been done to the arm, from which mortification ensued. The same condition of the artery as in Mr. Arnott's case, he (Mr. Phillips) believed was present. The other case was similar.

Mr. Arnott was acquainted with Mr. Turner's cases; in them the inner coats were torn irregularly, not simply divided, and inverted, as in his own case. An example of spontaneous gangrene—i. e. unconnected with external violence—had occurred in town, in which the same lacerated condition of the inner coats was observed as in Mr. Turner's cases.

Intestinal Concretion of Phosphate of Lime.

Dr. Bright exhibited an intestinal concretion or calculus, chiefly remarkable from its being composed simply of phosphate of lime, surrounding a nucleus of faeces. The patient from whom it was taken was under the care of Mr. Stone, and was six years of age. The symptoms presented were those usually observed in faecal abscess; there was a swelling on the right side of the abdomen, attended by gradual emaciation, and there was a discharge of pus and mucus, occasionally, from the bowels. In addition, however, to these symptoms, there was a discharge of puriform fluid from the bladder. The child died in twelve weeks after the first attendance of Mr. Stone. On examination, great suppuration was found at the caput coli, in which were two calculi; the one exhibited, which was about the size of a pigeon's egg, and another about half the size. From the composition of the calculi, it was at first suspected that they were formed in the kidney, and had escaped by ulceration through the right ureter; careful examination, however, proved this opinion to be erroneous. The calculi were formed of successive layers of phosphate of lime; the nucleus was a small portion of faeces. In another instance, under the care of the same practitioner, a number of calculi, of the same composition, had passed away from the rectum with the faeces.

Mr. Alcock remarked, that the phosphate of lime calculus was usually the re-

sult of chronic irritation of the mucous membrane of the bladder. Might not the intestinal irritation account for the formation of the bodies in the case under discussion?

Dr. Marshall Hall asserted, that calculi of phosphate of lime were never formed in the urinary apparatus: they were only formed in the prostate gland.

Mr. Erasmus Wilson had in his possession a portion of a colon in which there were a number of pouches containing calculi, probably composed of the phosphate of lime.

Disorganizing Inflammation of the Valves of the Heart occurring in connection with acute Rheumatism.

Dr. Watson exhibited some specimens of morbid anatomy, which were, as far as his knowledge went, perfectly unique in some particulars. They were cases of a peculiar kind of disorganization of the valves of the heart, resulting from acute inflammation connected with rheumatism. It was known well, that in articular rheumatism it was very common for some portions of the membranes of the heart to become inflamed; indeed, it had been calculated, that of cases of rheumatism of the joints occurring in London, at least one-third were complicated with some kind of cardiac inflammation, of which endocarditis and pericarditis were the most common. In the two cases from which the preparations exhibited were taken, the inflammation had fallen upon the lining membrane of the heart, producing a peculiar disorganization of the valves. In each instance there was a *ragged* perforation or destructive ulceration of one or more of the aortic valves. In both cases the muscular structure of the heart was diseased; in one instance there was ulceration completely through the septum, and in the other an abscess as large as a hazel-nut was found in the muscular structure of the septum.

The history of both cases was very similar. They occurred in young women of twenty-one and twenty-two years of age. Both were sufferers from a first attack of acute articular rheumatism; both had suffered from acute pleurisy, but had been free from pericarditis; one was ill three weeks, the other a month; both cases occurred in the same month; the sounds of the heart in both cases were altered, and there were palpitation and pain in that region.

The cases were peculiar from the rapid disorganization which had taken place from acute inflammation, from their connection with acute rheumatism, from the muscular structure being involved, perfora-

tion of the septum, and abscess of the substance of the heart.

Dr. Hodgkin said, that there were three or four preparations in a collection with which he had at one time something to do, similar to those brought forward by Dr. Watson. In one case there was perforation of the semilunar valves of the aorta, but he did not know whether the patient had suffered from acute rheumatism.

In one case of acute inflammation of the lining membrane of the heart, connected with rheumatism, a deposit was found on the edges of the valves without perforation. In another instance, which he had watched carefully during the last stage of the disease, and in which the physical signs resembled those which are present in retroversion of the aortic valves—the pulse remaining perfectly regular—a large aperture was found in one of the semilunar valves. There was also a preparation of a perforation of the mitral valve—he did not know its history. He had never seen pus in the muscular structure of the heart. In the few cases of acute carditis which had occurred, no suppuration took place before death, the patients perishing from other causes. He believed the deposits found on the edges of lacerated valves, or diseased portions of the lining membrane, were deposited from the blood, and were not exudations from the diseased structure.

Mr. Meade had examined a patient who had died with all the symptoms of acute pericarditis, but he did not know whether it was connected with rheumatism, in which the only lesion found was a large ulcerated hole through one of the aortic valves.

Disease of the Pons Varolii.

The case from which this preparation was taken was under the care of Mr. Henry Obré, assistant surgeon to the St. Mary-le-bone Infirmary. The patient was a boy nine years of age. About a week previous to his coming under the care of Mr. Obré, he had received a blow from a stone on the left malar bone. It produced no other inconvenience than ecchymosis. His health had always been good. About a week after the receipt of the injury, he showed an indisposition to play, and was attacked with diarrhoea, vomiting, and gradual loss of power in the left side. At this period he came under the care of Mr. Obré, when the following symptoms presented themselves:—As he lay, his head was thrown back, he complained of pain in the posterior part of it; there was violent strabismus of both eyes, which were drawn to the left angle; the pupil was obedient to light; the sight and motion of the lids natural; there was hemi-

plegia of the left side. He was sensible of the desire to pass his evacuations; the urine passed seldom, and in small quantities. A catheter was attempted to be passed into the bladder, but when it had been introduced about as far as the bulb of the urethra, its further passage was prevented by complete and violent priapism. The limbs, at the same time, were drawn up, and the whole body suffered from intense spasm. These phenomena were repeated at each attempt at introducing the catheter; but the moment the instrument was withdrawn, he returned to his former state of quiet. When the paralysed extremities were pinched, pain was felt; but he had no power of motion, except when the urethra was irritated: the motion was then involuntary. He had perfect sensibility and power of speech. He continued in this state for nine days, at the expiration of which he died. On examining the body the following day, the brain was the only organ which was found diseased; the dura-mater was more than naturally vascular and adherent to the bone; the brain was firm, and gorged with blood; on the under and right side of the pons Varolii, close to the pyramidal body, was a dark ragged opening, which communicated with a cavity in the pons, the size of a pigeon's egg, which presented the same appearance; there was also a smaller opening passing into the cavity from the left side; it contained no purulent secretion or fluid of any kind; the cavity occupied the right side chiefly; the pons was enlarged to double its natural size and weight.

Dr. Hodgkin had seen two cases of disease of the pons varolii; in one instance the disorganization was the result of apoplectic effusion; in the other instance, he did not know the cause of the disease. He thought that, although, in Mr. Obré's case, no fluid was found in the abscess, some had, probably, been there, and had escaped when the parts were removed.

Dr. George Burrowes exhibited a fine specimen of gangrene of the lung.

Mr. Stanley had a specimen of injured shoulder, and another of a rare form of hernia to show, but owing to the lateness of the hour these were deferred till next meeting.

ROYAL COLLEGE OF SURGEONS.

WE are not in general admirers of Sir Anthony Carlisle's lueubrations, and least of all of such as appear from time to time in the newspapers. The subjoined letter, however, really contains some strong facts, pithily given, and which certain parties would do well to bear in mind:—

To the Editor of the Times.

SIR,—I have "lived long and variously in the world" without meddling with affairs beyond those of my profession, and I ask the favour of a place in your paper for some medical observations which passing discussions seem to require.

The "men who turn the world upside down" are hotly pursuing the established institutions of English physicians, surgeons, and apothecaries, under the plea of "centralizing and equalizing," or of uniting the different classes of medical men.

If the agitators of these complicated projects had been themselves remarkably distinguished for professional talents and enlarged experience, the legislators, to whom they appeal, might equitably devote a moderate portion of parliamentary time, and of public money, to obtain impartial evidence, but the inquiry before a Committee of the House of Commons, in the year 1834, forbids any such hope.

That discontent has been fostered in every branch of the medical profession must be admitted, but after five years of unceasing agitation, out of 14,000 English surgeons the number of discontented does not amount to 600, a proof, at least, that the majority are not dissatisfied with their protecting college.

The British public, to whom these specious appeals against all established medical institutions are directed, should know how the reckoning between the rulers of the London College of Surgeons and its members have stood for the last 25 years.

The following is a statement of the expenditure:—

For the purchase and binding of books, and for the salaries of the officers of the library, to Midsummer 1839	£15,844
On account of the museum, including the salaries and wages of the officers and servants of that department, to Midsummer 1839	47,030
For the present building, including fixtures	41,803
Total..	£104,677

And whence came this £104,677? Not one shilling of it from the pockets of the members—not one shilling of it from the public taxes—but every shilling of it derived from the nightly labours of the Court of Examiners, appointed by charter to grant diplomas, the yearly accounts of which have been printed, for the satisfaction of all the members, in the annual lists.

And how stands the opinion of those members who send the candidates for Examination? The following table will show:

In 1837, were admitted for diplomas	303
1838,	588
1839,	675

Nor does any compulsory law or other obligation bring candidates to seek the diplomas of this College, for it is entirely optional, and the colleges of Edinburgh and Dublin are both open to English candidates upon less expensive terms.

This high station of the London College of Surgeons does not lead to any selfish incivilities, for its library and its museum are free to all men of research, and physicians, surgeons, and apothecaries, from all parts of the globe have daily access to those self-endowed depositories of medical knowledge. If the colleges of Edinburgh and of Dublin entertain a wish for equality, let them compete with the London Medical Institutions, and, if found to excel, they will assuredly obtain a preference; but, as universities for instruction, and also for the granting of licenses to practise, they have no analogy to the colleges of physicians and surgeons of London, which are not so constituted.

The preferable schools of surgical education in London, and of medical education at Oxford and Cambridge, have never ceased to produce surgeons and physicians celebrated throughout the world, and they will so continue to do, unless, through any unforeseen event, they should be reduced to a state of common mediocrity.

The London College of Surgeons has not importuned the Legislature with frequent or frivolous schemes for obtaining even needful powers, because the members of it well knew that the multiplication of laws has a tendency to create new sources of oppression, and that it is difficult to define the privileges of surgeons without interfering with the liberty of aiding the urgent necessities of human suffering; but, if the agitators for legislation must have an occasion for the interference of the legislature, the following declaratory enactment might serve to protect the public by proclaiming the names of legally qualified surgeons, and thus leave the adventurer and the quack to the judgment of the people. This enactment might be to the following effect:—

That those persons only who had obtained the requisite diploma, degree, or license to practise surgery, should assume the style or title of surgeons.

That those persons who should thereafter assume the style or title of surgeon without having obtained the requisite diploma, degree, or license, should be liable to certain penalties.—I am, sir,

Your very obedient servant,

ANTHONY CARLISLE.

Langham Place, March 24, 1840.

MORBID HYPERTROPHY OF THE MUSCULAR SYSTEM.

Two brothers born in the country had remained strong and healthy up to the age of 10 years; at that time they went to work in a very cold and damp village, and their health was soon affected. The muscles of their lower extremities increased remarkably in size; and the whole muscular system partook of the same affection, so that they were both disabled from their work, and were taken to the chief town adjacent, where they were received into the surgical clinique. Hip-baths were employed, but they seemed rather to aggravate their condition. The increase of size of their muscular system went on to an extraordinary degree. One of them died with symptoms of hypertrophy of the heart, (no examination was made after death,) and the other in the hospital of Incurables at Naples, under the care of Drs. Coste and Gioja, by whom his case is related.

He is now 18 years old, and in the following condition:—He is small, and from the absence of the signs of puberty, has the appearance of a child of 10 or 12 years old; the dimensions of his head are, however, in proportion to the size of his body, very remarkable; his tongue is at least one-third larger than in the natural condition; it fills the cavity of the mouth, and is an obstacle to him in chewing, speaking, and swallowing. The masticating muscles are very voluminous; the chest is short, the ribs are rather small; the abdomen, in consequence of the thickness and rigidity of its muscles, and especially from the extraordinary prominence of the recti, is large and hard. The muscles of the head and neck present nothing unusual. Among those of the back, one observes a considerable hypertrophy of the upper part of the trapezius, and of the digitations of the *lattissimus dorsi* and the *quadrati lumborum* are twice as large as in the natural state. But the most remarkable development is found in the upper and lower extremities. The deltoid muscles are three times as big as usual; and the *gastrocnemii* form an extraordinary prominence; the tendons of both are thin and hard. The other muscles are hypertrophied in nearly the same degree as the preceding. The bones of the limbs appear to be rather small, and as if they were atrophied, especially at the condyles of the femur and tibia. The forearm and the fingers are passively fixed in the position of flexion, and patient cannot extend either of them. The thighs are in like manner bent upon the pelvis, and the legs upon the thighs, so that the soles of the feet touch the ischia.

The feet are so bent that the back of each is in the same line with the outer ankle; and the sole is placed in the direction of the inner ankle. The skin covering the hypertrophied muscles is dark-red, and traversed by varicose veins. The functions of the genital organs appear to be scarcely developed; but those of the rest of the body are normally performed. The patient is employing iodine, both internally and externally, with some advantage.—*Schmidt's J. hrbucher.* xi 2. 176.

ADMINISTRATION OF QUININE BY THE SKIN.

A WRITER in the *Bulletin de Therapeutique* relates four cases in which intermittent fever was cured in children by rubbing into the axilla, an ointment composed of one drachm of sulphate of quinine with two drachms of lard.

HÆMORRHAGE FROM LEECH-BITES.

To the Editor of the Medical Gazette.

SIR,

YOUR last number contains a mention of the plan of stopping the bleeding from leech-bites with a needle and ligature. The following is, I dare say, nothing new, but I know to my comfort it is something useful. It is simply, instead of applying powdered argenti nitras, to use a stick of it scraped down to the size of the lead in a common drawing pencil. It may then be passed between the lips to the bottom of the wound, and being kept there a second or two it will—at least so I have found it—instantly and effectually stop the hæmorrhage.—I am, sir,

Your obedient servant,

JOHN BARRETT.

Bath, 17, Westgate Buildings,
March 31, 1840.

RECEIVED FOR REVIEW.

A Series of Anatomical Sketches and Diagrams; with descriptions and references. By Thomas Wormald and Andrew Melville McWhinnie. Highley, 1840.

Pathological Observations on the Diseases of the Uterus. By Robert Lee, M.D. F.R.S. Lecturer on Midwifery at St. George's Hospital. The coloured illustrations from original drawings by Mr. Perry. Part I. Churchill, 1840.

Researches in Embryology (second series), with plates. By Martin Barry, M.D. F.R.S.E. Taylor, 1839.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, March 5.

F. F. Trenchard, Taunton, Somerset.—C. D. Finch, Greenwich.—J. G. Mitchell, Tavistock, Devon.—W. G. Shepherd.—G. Downie, Newcastle-upon-Tyne.—J. Pownall, Kosterine, Cheshire.

Thursday, March 12.

John Ranson, Sproughton, Suffolk.—H. C. Atlay, Stamford, Lincolnshire.—F. M. Baker, Botley, Hampshire.

Thursday, March 19.

Foster Stedman, Pakenham, Suffolk.—J. W. Ball.—Joseph Hopgood.

WEEKLY ACCOUNT OF BURIALS.

From BILLS of MORTALITY, March 24, 1840.

Abscess	3	Gout	1
Age and Debility	44	Hooping Cough	3
Apoplexy	5	Inflammation	14
Asthma	15	Bowels & Stomach	2
Cancer	1	Brain	3
Childbirth	3	Lungs and Pleura	8
Consumption	32	Insanity	3
Convulsions	20	Jaundice	1
Dentition	3	Paralysis	1
Dropsy	9	Small-pox	3
Dropsy in the Brain	5	Tumor	1
Erysipelas	1	Unknown Causes	76
Fever	2		
Fever, Scarlet	8	Casualties	5
Fever, Typhus	1		

Increase of Burials, as compared with }
the preceding week } 63

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

March.	Thermometer.	Barometer.
Thursday . 19	from 37 to 49	30.09 to 30.22
Friday . . 20	27 49	30.25 30.22
Saturday . 21	28 45	30.25 30.30
Sunday . . 22	25 46	30.25 30.06
Monday . . 23	30 43	29.96 30.08
Tuesday . . 24	28 40	30.03 30.10
Wednesday 25	27 42	30.17 30.23

Wind N.E. on the 19th; N. on the 20th and following day; W. on the 22d; N.E. on the 23d and two following days.

The mornings of the 19th and 20th overcast. A few drops of rain fell on the 20th. The 21st and morning of the 22d clear; afternoon of the 22d and following day cloudy, with frequent showers. The 24th and following day generally clear. Snow accompanied with hail fell at times.

Rain and melted snow, 12 of an inch.

CHARLES HENRY ADAMS.

NOTICE.

The report of Dr. George Gregory's interesting lecture delivered at the Royal Institution, is unavoidably postponed till next week.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, APRIL 10, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

BY BENJAMIN PHILLIPS, F.R.S.
Surgeon to the St. Marylebone Infirmary.

DISEASES OF ARTERIES—*continued.*

OSSIFICATION—DILATATION—CONTRACTION—OBLITERATION—ANEURISM—
Definition—Varieties—Spontaneous—State of Coats in—Most common Seat of—Causes—Dissecting Aneurism—State of Blood in the Sac—Changes in the Sac—Effects of Pressure in neighbouring Organs—Termination—Symptoms.

OSSIFICATION.

I HOLD that the depositions of which I have spoken, whether in the form of false membrane, of caseous, steatomatous, atheromatous, puriform, cartilaginous, or calcareous matter, have been a consequence of a low degree of inflammation; and that all, with the exception of false membrane, are most commonly seen in the cellular tissue between the internal and middle coats. I know that it is believed that they are not results of inflammation, because very commonly no vascular injection can be discovered at the point; but whether it be called inflammation, or whether it be termed a perverted nutrition, still I apprehend increased or deranged action has existed at the point. When osseous matter is deposited, it may occupy the middle tunic, and may consecutively implicate the internal tunic, or it may occupy the internal tunic alone. The former affects most commonly old people, in whom it was supposed, by Beclard, to be the last change which the fibrous tissue

undergoes; and is so commonly met with, that of ten persons above 60, Bichat states that we shall find at least seven presenting this condition. This condition is not always limited to points of an artery. Beclard states, that, at the Bicêtre, he saw, in an old person, the aorta and common iliaes converted into a true, solid, incompressible tube, and apparently composed of one solid mass. I saw a similar case at the St. Marylebone Infirmary lately, in a woman of the name of Sutherland, who died of senile gangrene. The arteries of the inferior present this condition, incomparably more frequently than those of the superior extremities: Lobstein states it to be in the proportion of 30 to 1. Indeed we may find, in very old persons, the femoral and its branches studded with osseous matter, while the brachial and its branches are completely exempt from it.

Lobstein gives the following as the order of frequency, and, as far as my opportunities of observation go, they confirm, in the main, his results:—

The arch of the aorta.
The bifurcation of the abdominal aorta.
Thoracic aorta.
Splenic artery.
Abdominal aorta.
Femoral and its branches.
Spermatic artery.
Hypogastric.
Coronary arteries of the heart.
Some branches of the subclavian.
Bifurcation of common carotid.
Inflexions of internal carotid.
Branches of external carotid; and last in frequency, the pulmonary artery.

Although these depositions are most commonly met with in aged persons, they may occur at other periods of life. Mr. Young had a temporal artery taken from a child of fifteen months, in which the membrane was converted into a calcareous tube. The aorta has been found ossified at three years. A complete ossification of the su-

perior mesenteric artery has been seen at 30 (Andral). However, as a general proposition, it may be laid down, that before 50 complete ossification is rarely observed. After that, this condition is frequently observed; but beyond sixty or seventy, the proportion does not seem to increase.

The analysis of this substance, made by Brande, shewed that it was composed of phosphate of lime, 65.5; animal matter, 34.5. Laissaigné's analysis is different—animal matter, 50; phosphate of lime, 47½; carbonate of lime, 2; sulphate of lime, some traces.

The second species of ossification is more frequently met with than the first, and almost exclusively occupies the internal tunic. It is seen under the form of yellowish plates, irregular, circular, elliptical, more or less thick and fragile. A thin pellicle at first separates them from the blood; but afterwards, either in consequence of the deposition of new matter or the destruction of the pellicle by erosion or absorption, it disappears, and they are directly in contact with the blood. The surface is usually smooth; but sometimes it is rough, and projecting into the canal. It is most frequently in the aorta, particularly in the arch, that this condition is observed, which co-exists commonly with a dilatation of the vessel and hypertrophy of the left ventricle. At the highest degree of this transformation, a third or a half of the circumference of this vessel is converted into scales of variable size, between which very small points, not ossified, may be found. Whether this condition be produced by a "drying up" of the nutritive arteries of the vessel, the deposition of an earthy or calcareous substance, by the friction to which the arterial tunics are subject, by the solidification of gelatinous fluids, by the "particular faculty which the internal tunic possesses of becoming incrustated with phosphate of lime," by inflammatory action, or by an ill regulated nutrition, it is extremely difficult to determine. So much seems certain, that it belongs to the senile age. Before that period of life it may show a precocious old age in the affected organ.

These depositions of calcareous matter may be the source of much mischief. The constant motion may direct their asperities against the internal tunic; it may become irritated and ruptured. The increase of deposit may produce a similar result. The blood introduced into these fissures, or into the cavities occasioned by the rupture of small abscesses, or steatomatous or atheromatous tumors—a sort of ecchymosis may be the consequence, and the cellular tunic may project, and thus the production of aneurism may result. Another effect may be the consequence; if the

parietes be thin, and the calcareous deposition considerable, the tunic may give way, and hæmorrhage be the consequence: in the cranium this occasionally occurs, and produces apoplexy. These concretions ordinarily lessen the cavity of an artery, and may completely obstruct it. There are cases recorded in which the calcareous matter has blocked up the vessel. There are others, of which Dr. Carswell has seen one or two, in which a projecting concretion has occasioned a coagulum and obliteration. They may cause arteritis, and a consequent coagulation and obliteration. It is said, that the absence of these concretions is a cause of longevity; and Thomas Parr is cited as a glorious instance of this fact. It is said, they are not found in long-lived animals, as the elephant, the eagle, &c. Another effect is attributed to ossification of arteries—gangrene. No doubt that the co-existence of ossification of arteries with gangrena senilis is very frequent; but if they stand to each other in the relation of cause and effect, why is not gangrena senilis more frequent? why is the disease now and then found without any calcareous deposition? I saw a case the other day of a young woman suffering under advanced tubercular phthisis, in whom the disease was presented at the tip of the nose, as well as at the extremities—in whom the extreme languor of the circulation could alone account for it. In gangrena senilis, if the calcareous deposition be a common cause, it must be by occasioning coagulation of the blood: gangrene, by the simple contraction of an ossified artery, can hardly, I should think, occur.

DILATATION.

As a consequence of certain of the changes or depositions which I have described, an artery may lose its elasticity, and a dilatation may be the consequence. The dilatation is commonly seen to affect more or less of the whole circumference of the vessel, and is usually observed in the aorta, in its whole length, the common carotids, and the subclavian. I show here probably an unique specimen of the same condition of the iliaes. This dilatation is sometimes accompanied by an elongation of the vessel; and it then presents a character not unlike that of a varicose vein. Sometimes there is no change in the thickness of the parietes; at other times they are thin and flaccid, like veins. So long as the internal membrane is not ulcerated, nor inflamed, the blood does not usually deposit clots in these pouches. Hereafter we shall have to point out certain exceptions. I apprehend the cause of this condition to be the impulsion of the blood, and consequent pressure against the parietes. In

the natural state there is a perfect equilibrium between the power of impulsion of the heart and the power of resistance of the arteries. If the force of impulsion is increased a third or a half, or is double, then, at each contraction of the left ventricle, the arteries are distended beyond their natural distensibility: this distension may be a cause of irritation and structural change in these parietes. We must admit that the resisting power has diminished at the point; otherwise we ought to find it much more frequently than we do at the arch of the aorta. The elongation of the artery during the systole of the ventricles of the heart is an admitted fact in the present day. To be convinced of this, we need only examine an artery at a point of bifurcation to see this effect; and it is, no doubt, by the constant repetition of this movement, that arteries are elongated by age, as is common in the descending aorta, the temporal arteries, and others. So long as the dilatation is inconsiderable, no inconvenience is experienced, but when the sac becomes large, its effect on adjacent parts is like that of the sac of an aneurism. The dilated portion of an artery may terminate in an ordinary aneurism. At some point, destruction of the internal and middle tunics takes place, in the course of the changes of structure by which the artery at first became dilated, and an aneurismal sac is developed. Recollect, however, that ordinarily, dilatation has not been the cause of aneurism, but the changes of structure by which the dilatation was preceded. May a simply dilated portion of an artery be converted into an aneurism? May it be filled with coagula? This is a question which we are now in a condition to resolve, and undoubtedly the opinion of Scarpa must undergo modification. We shall, however, reserve our evidence on the subject until we treat of aneurism.

CONTRACTION.

A diminution in the capacity of arteries has been principally observed in those of large size. Morgagni has seen the aorta reduced to the size of a little finger, in a man of 30. Desault has seen the thoracic aorta reduced to the size of a writing pen. Laennec has seen, in robust individuals, the diameter of the aorta not exceeding eight lines. Elliotson has seen the pulmonary artery twice contracted; in one case, so that the little finger could not be introduced into it; in the other, it was not larger than the humeral. Baillie has seen the femoral so constricted that light could not be seen through it. No doubt these conditions may be sometimes congenital, probably always so, in those where no change of structure can be detected;

but more frequently the diminution seems to be a consequence of the thickening of the parietes, from steatomatous, calcareous, or osseous depositions.

OBSTRUCTION.

These causes may proceed further, and produce obliteration; but obliteration is produced by many other causes: first, most transverse wounds, osseous spiculae, around which a coagulum may be formed, a rupture of the internal tunic, by the violent action of a limb, of which two cases are given by Professor Turner, in the Edinburgh Medico-Chirurgical Transactions; *arteritis*, which is no doubt the most frequent cause; by coagula consequent upon *sphacelus*, *gangrena senilis*, or other cause. The effects of obliteration are variable: if a coagulum occupy the whole length of the principal artery of a limb, gangrene is almost inevitable. When the obliteration is circumscribed, as after a wound or ligature, it is not so. When obliteration is caused by the rupture of the internal membrane, a sensation, as of something giving way, is experienced; the part is tumefied, the pulse on that side is either extinguished or much enfeebled, the member is cold, numbed, and its sensibility is diminished. Paralysis may be caused by the obliteration of the principal artery of a limb.

ANEURISM.

The term aneurism has been employed to describe several very distinct diseases of the arterial system; all being, however, accompanied by tumefaction or tumor. Thus the artery may be dilated without any destruction of its coats; this may constitute an aneurism. There may be a rupture of one or more of the tunics, the remaining tunics being more or less distended; this is also an aneurism. There may be a mechanical or other destruction of the whole of the parietes of an artery; blood may be poured out into the surrounding cellular tissue, which may or may not be condensed around; this is an aneurism. A wound or disease may establish a direct communication between an artery and a vein; this also is an aneurism. In fact, an aneurism may be defined to be a tumor formed by blood, sometimes contained within the dilated or destroyed coats of an artery, sometimes effused around an artery which still communicates with it, sometimes passing from an artery into a vein.

I do not propose to occupy you with all the distinctions insisted on—such as true, and false, and mixed, whether primitive or consecutive; because I believe them to be a source of confusion and unfruitful debate among the authors who employ them. I shall consider aneurism as spon-

tancons, traumatic, and varicose. Aneurism is a disease almost exclusively confined to the aortic system. I know of only doubtful cases in which the pulmonary artery was affected.

Spontaneous Aneurism.—Many conflicting opinions exist as to the condition of the arterial tunics in aneurism. Fernel maintained that every aneurismal tumor was a pure and simple dilatation of all the arterial tunics; others who supported this opinion, admitted that structural change could often be demonstrated in the internal and middle tunics. Sennert and Hildanus combated with success the theoretical ideas of Fernel, but greater development and consistency were given to their opinions by Scarpa. Scarpa did not deny that a dilatation of the tunics might occur, but he maintained that it was not aneurism. According to him, an aneurism is always the result of a pathological alteration, of a gradual destruction of the arterial parietes, which has permitted the blood to escape from the canal, and distend the cellular tunic of the artery. This celebrated surgeon has devoted much of his work to demonstrate this doctrine, which he has supported, not only upon the results of his own dissections, but upon a profound examination of the observations published by his predecessors and contemporaries; and we cannot deny that Scarpa has rectified the ideas of those who went before him upon this subject.

Scarpa, and other eminent surgeons, do not consider a dilatation to be an aneurism, whether it occupy the whole circumference of an artery or only a part of it; and the distinctions which he lays down between dilatation and aneurism are intended to support this position. According to him, dilatation differs from aneurism, because it commonly occupies the whole of the circumference of the vessel, while aneurism is limited to one of its sides. Aneurism communicates with the artery by a kind of neck; whilst, in dilatation, no such contracted communication is found. In the interior of aneurismal tumors, clots or fibrinous concretions are found; these are not found in simple dilatation. In aneurisms, the membranes are often disorganized or destroyed; in dilatations they remain healthy, or only present inconsiderable changes of structure. Here, then, we have the alleged differences fairly set out, as well as the reasons why dilatation should be held to be a disease distinct from aneurism. Mr. Hodgson differs widely from Scarpa: he admits, that, at an early period of its existence, an aneurism may consist of simple dilatation; but he does not admit that they are seen, except very rarely, when the

tumor has acquired a certain bulk. Now I shall adduce the evidence which may be fairly urged for the purpose of shewing that such opinions are too exclusive. If it had merely been stated that the term aneurism was limited to a particular form of disease, characterized by a destruction of the internal and middle tunics, I should have no right to find fault with the limitation; but as the reasons are distinctly given why dilatation should be excluded, it is not unbecoming in me to endeavour to shew that the objections are inconclusive. In the first place, there are carefully recorded eleven or twelve cases observed by Baillie, Zannini, Corvisart, Berard, Cruveilhier, Dance, Breschet, and Thurnam, of pure and simple dilatation of a portion of one of the ventricles of the heart. There was demonstrated, in several of them, a perfect continuity of the tunics; there was a contracted point of communication, or neck, between the cavity of the tumor and the cavity of the ventricle; and in all, I believe, coagula were found. A considerable number of cases, observed with the greatest care, are also before us, where the same condition was demonstrated in the aorta; the dilatation was partial, occupying one side of the vessel, the tunics were perfectly continuous, but ossific matter was deposited in them. The fundus of the tumor was considerably larger than the point where it communicated with the artery, and they contained coagula, which, in several cases, were ranged in regular layers. Where the dilatation affects the whole circumference, coagula do not seem to be usually deposited. Similar tumors, dependent upon pure and simple dilatation, have been observed in the common carotid, external and internal iliacs, middle meningeal, temporal, subclavian, axillary, brachial, coeliac, and splenic trunks, the smaller cerebral, the femoral, and the ulnar arteries. At present, we believe these cases to be rare; and, no doubt, when they have acquired a certain volume, the internal and middle tunics are ruptured, the external tunic alone remaining to resist the impulse of the blood; and at this time the tumor offers the exact conditions of one which was the consequence, from its commencement, of the perforation of those tunics.

The position assumed by some persons who have felt themselves bound to admit this condition of the aorta, that this is a condition peculiar to the aorta, is therefore untenable; and I have no doubt, now that the disposition is set on foot to investigate carefully this point, we shall annually have fresh evidence in support of the necessity of modifying the opinion of Scarpa and Hodgson, but our gratitude to these men

should not be less, because we find it necessary to advocate a certain modification of their definition. At present our facts do not enable us to go further than to state, that occasionally aneurismal tumors are constituted by a simple dilatation of the arterial tunics. At the same time my firm opinion is, that when aneurism is spontaneously produced, commonly it is primitively formed by a dilatation of the three arterial tunics, of which the internal and middle are more or less changed in their structure. At a later period, under distension these tunics give way, and then the condition described by Scarpa and Hodgson exists: supposing this opinion to be correct, we should return to the definition which in the present century has been generally discarded, that a *true aneurism* was a tumor formed by the *dilatation of the whole of the arterial tunics* at a point of the circumference of the vessel; that a *false aneurism* was a tumor consequent upon or resulting from the rupture of the *internal and middle tunics*, and the extravasation of blood, arrested only by the resistance of the external or cellular tunic. Such are the modes by which aneurisms are spontaneously produced; but they may succeed to wounds or other direct injuries, and they are then termed *traumatic aneurism*.

Aneurism spontaneously produced is most frequently observed to affect the large arteries in the vicinity of the heart—the external iliac, the femoral, the popliteal, the subclavian, and the axillary. The arteries of the arm, the forearm, the hand, the leg, and the foot, may also be affected; those of the interior and exterior of the cranium are also occasionally affected; and in the museum of M. Schmiedler, at Fribourg, is a preparation which shews a similar condition of both the central arteries of the retina.

Although commonly we find only one aneurismal tumor in the same individual, yet occasionally we may see several. Pelletan saw on a single individual, 63 aneurisms, varying from the size of a filbert to that of a hen's egg. Sometimes, as in a case described by Sir E. Home, no sooner is the operation performed for the cure of one, than another is manifested in the other extremity. When this predisposition seems to exist, slight causes may occasion their development. Mott speaks of a man who, in making a violent effort to raise a load, saw arise an aneurism of the left femoral: some time after, the same person, by stamping violently, produced a popliteal tumor. Gosshalk relates a case where there was an aneurism of the right popliteal, two of the left femoral, a fourth, large, of the abdominal aorta, a fifth at the arch of the same vessel.

Causes.—These tumors are unquestion-

ably much more rarely seen in women than in men; although they suffer as often as men from many of the diseases to which the development of aneurism is ascribed. This immunity may be a consequence of greater sobriety, less violent efforts and laborious occupations: but it is in the popliteal artery that this difference between the sexes is most marked. Mr. Guthrie holds the proportion to be twenty or thirty to one. I have collected ninety-two cases, of which three occurred in women. Wilson says, he heard John Hunter say, that he had never seen a case of spontaneous external aneurism in a woman. Hodgson collected 63 cases, of which 56 were men and seven women, or about eight to one. I have collected 163 cases, of which 142 were men and 14 women, or about eleven to one. Mr. Guthrie believes that its frequency in man depends on the greater use he makes of his legs. Richerand says, that of twelve cases of popliteal aneurism he had seen, ten were probably produced by violent extension of the leg. If, says he, you place a leg on the table, and make sudden and violent extension, so as to produce a crackling sound, and then carefully examine the artery, the middle tunic will be found to have given way. In this experiment I have often failed, and only very rarely succeeded. With respect to the opinion which refers the development of aneurism to the employment of mercurials in the cure of syphilis, if it were a real cause, it ought to operate more frequently on women, for they are as subject as men to syphilis and the remedy. Until after puberty, a diseased condition of the arterial tunics is comparatively rare; aneurism is equally so.

I have made a calculation for the purpose of estimating the comparative frequency in each artery: the cases collected amount to 195, of which 61 were popliteal, 46 femoral, 18 carotid, 19 subclavian, 14 axillary, 8 external iliac, 5 innominate, 4 humeral, 4 common iliac, 3 anterior tibial, 2 gluteal, 2 internal iliac, 3 temporal, 1 internal carotid, 1 ulnar, 1 peroneal, 2 radial, 1 palmar.

As to age, I have got together 122 cases, as follow: under 13 years, one; from 15 to 20, three cases; from 20 to 25, five cases; from 25 to 30, twelve cases; from 30 to 35, twenty-four cases; from 35 to 40, fifteen cases; from 40 to 45, twenty cases; from 45 to 50, seventeen cases; from 50 to 55, eleven cases; from 55 to 60, seven cases; from 60 to 70, four cases; from 70 to 80, three cases. One thing is shewn as to age, that aneurism is very much more common between 30 and 50 than in the ten years before and after; and that before 20 and after 60 the disease is very rare.

It is extremely difficult, if not impossible,

to point out with any certainty the causes of aneurism. I believe an aneurismal tumor is almost always preceded by a structural change in the parietes of the vessel; that change would, therefore, constitute a secondary or predisposing cause; and our inquiry must therefore be directed to the conditions under which these changes are most commonly developed. Among the causes which are supposed to conduce to the change of structure in arteries, are hypertrophy of the left ventricle, bifurcations or curvatures of the arteries, against which the blood is propelled almost perpendicularly—contiguity of the heart—unfavourable conditions of large arteries—their parietes being disproportioned to the capacity of the canal position; in the vicinity of articulations, by which they are subjected to extensive movement; immoderate indulgence in wine, excessive venery, mercurials long administered, and syphilitic infection, which according to Morgagni, Corvisart, and Scarpa, exercises an action which occasions softening, renders them friable, or produces ulceration, herpetic affections, scrofula, scorbutus, rheumatism, and gout. These changes in structure are a deposition of ossific, atheromatous, steatomatous, or purulent matter, which causes ultimately a solution of continuity in the internal tunic. That the cause is a general one seems probable, from the occasional universality of the disease. Lobstein gives plausible reasons why it should be referred to a disposition similar to, or identical with arthritis; he believed that this morbid principle acted upon the arteries as upon the bones: he details a certain number of cases, in which arthritis, or the disposition to it, seems to be exciting cause of similar depositions in the arterial tissues.

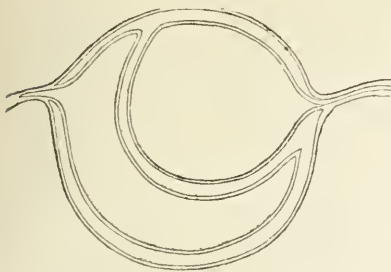
In this state I am obliged to leave the question, feeling that I am not in a condition to recommend either for your adoption, though I incline to the opinion that chronic inflammation is the more probable; nor denying that one or more of these influences may concur to produce that change in the arterial tunics which I have already set forth, and which predisposes to the production of aneurism. Now these dispositions having occurred, the internal tunic loses its smoothness, becomes unequal and rugous; by little and little yellowish patches appear, together with calcareous laminae, the internal tunic becomes friable, is separated from the middle tunic; if pressed with a finger or cut with a scalpel a crepitation like that resulting from the pressure of a piece of egg-shell is heard: as the disease advances, an ulceration is seen, the internal and middle tunics give way, the former as much more easily, as, in consequence of its natural fragility, it

opposes less resistance to the impulsion of the blood. At the circumference of the opening so produced the internal tunic may be seen usually terminating abruptly, and the middle tunic commonly cannot be followed around the sac, which is formed of the distended and dilated external tunic.

The experiments made by Nicholls, before the Royal Society, and repeated by many others, explain very well how, as a consequence of the ulceration of the internal and middle tunics, the blood, influenced by a lateral movement, raises or distends by little and little the cellular tunic, and forms a tumor. If, when those two membranes are destroyed, we inject water, or air, we see the external tunic raised in the form of a globular tumor. Thus, then, in the case of a solution of continuity of these tunics, the cellular coat sustains the lateral impulse of the blood; and when this resistance is vanquished, the sac is extended, and the blood accumulates in great quantity; but, happily, this blood usually becomes concrete and organized, constituting an obstacle to the rupture of the sac, and life is not, consequently, immediately compromised.

In a few cases, instead of raising the cellular tunic in the form of a more or less globular tumor, the blood passes down for some distance between the external and middle tunic, ultimately forming an extensive lateral or circular sac. Laennec observed it in the aorta, and termed it "*aneurisme dissequante*." Mr. Guthrie has seen such a sac on the aorta six inches long; with that vessel it communicated by a transverse fissure an inch in length: he has since seen a second case, in an old woman who died suddenly from a perforation of the innominate: the "dissecting aneurism occupied the ascending portion, the arch, and two inches of the descending aorta." Shekelton saw two fine specimens of this disease: the blood had formed between the external and middle tunics a sort of collateral canal, recommunicating afterwards with the vessel, receiving above a column of blood, which below, it again restored to the vessel: a false membrane invested this canal. There are also similar cases by Morgagni (Ep. 58, No. 13,) Nicholls, and McLacklin. In the 45th number of the American Journal of the Medical Sciences is a case of the same kind. The patient, a woman of 75, had dyspnoea, with forcible impulse of the heart; rhythm nearly natural. Upon examination, the heart was found of double its natural size. The aorta was apparently much dilated, and, when cut into, presented the remarkable appearance of being a double vessel, (see fig. 1.) The aorta was nearly surrounded by another vessel of much larger diameter, commenc-

ing opposite the great sinus of Valsalva, which accompanied the aorta until it divided into the primitive iliacs, where it



terminated in a cul de sac. The aorta communicated with the external vessel by a valvular fissure half an inch in length, which penetrated through the internal and partly through the middle coat, and which is situated half an inch above the semilunar valves. Not long since a very fine specimen of this disease was observed at the St. Marylebone Infirmary. The patient, a man of sixty, had a large heart, and chronic bronchitis: he died suddenly. Upon examination after death, a stellated laceration of the internal and middle tunics of the aorta was observed just above the semilunar valves. Through this point the blood had passed, and had separated the internal and middle tunics for the distance of a foot, extending along the thoracic aorta. The coagulum was about as large as an ordinary sized thumb.

When a violent effort or contusion is the accidental cause of the development of an aneurism, they usually occasion rupture of the diseased tunics, the blood is no longer sustained by any other than the external tunic, and the aneurism may appear suddenly, and in a short time acquire considerable size. At the time, the patient very often experiences an acute pain, and the sensation of something giving way; a numbness is felt at the parts beyond the rupture, which now and then cannot be moved without difficulty. Among these some might with propriety be classed as traumatic, for at the point there is a fair rupture, without dilatation or structural change; but as the external tunic is not destroyed in these, and as the whole are destroyed in traumatic aneurism, we shall prefer considering them in this place.

Under ordinary circumstances, the destruction of the internal tunic is of very small extent, the blood escapes in very small quantity, and at first it is a mere ecchymosis between the fibrous and cellular tunics. The extravasated blood is coagulated, and, in the first instance, blocks up

the opening, the part is distended by the lateral impulse of the blood, more blood escapes, and fresh coagula are formed. After some time the opening becomes of sufficient size to admit of the flux and reflux of blood. It may then be observed externally, and its progress is more rapid. When an aneurismal tumor is at first a consequence of simple dilatation, its progress for some time is very slow. After remaining apparently stationary, a sudden increase in size is observed; this increase may follow immediately upon great exertion, violent movement, a fall, a fit of coughing, or of passion. When it succeeds to any of these, the internal and middle tunics have given way; the external, more extensible, is dilated by the blood poured into it, and the tumor is the consequence: these tunics may give way without such exertions; but the increase is then usually less rapid.

Corvisart pointed out another mode by which aneurism may be spontaneously formed: he shewed that the destruction of the middle and internal tunics may be from without—by the development of “encysted tubercles under the external coat; by this means the aneurismal sac will precede the aneurism.” This opinion of Corvisart was almost lost sight of when Mr. Hodgson considered the matter further. The conclusion to which he came was, that those bodies were not tubercles, but a condensation of fibrous laminæ which had constituted aneurismal sacs no longer existing. Mr. Guthrie pointed out that Hentzel, in 1793, had stated that the matter contained in these tumors was very different from fibrine, and that a similar steatomatous matter was contained in the cases of Corvisart. Similar cysts have been shewn by Berard and others. Probably the tumors seen by Hodgson were cured aneurisms, those of Hentzel, Corvisart, Guthrie, and others, were cysts developed under the external tunic of the aorta: these cysts might open into the aorta, and become aneurismal sacs, as is testified by the fact contained in the *Compte Rendu of the Anatomical Society for 1829*. I doubt much whether they are often so observed, or elsewhere than in the aorta.

State of the blood in the sacs.—The blood contained in an aneurismal sac has occupied much attention: it is deposited in layers, which have occasionally traces of organization, so marked that Valsalva took them, on two occasions, for “carniform excrecences of the arterial parietes.” It is particularly in circumscribed aneurisms that we meet with this coagulum—more rarely in those which are diffuse, at least unless they be of long standing. These masses present a varied aspect ac-

cording to the length of time since their deposition, and, according to Laennec, to other circumstances which it is not easy to appreciate. The more central are formed of recently coagulated blood, external to these the coagula are firmer, and of a blackish red colour, and evidently pervaded by a certain quantity of fibrine; more external still, layers of pure fibrine, white, or yellowish, firmer, and less humid than the polypiform concretions of the heart. These masses commonly offer an assemblage of concentric layers; the external of which are brownish, dense, and coriaceous, becoming, as we approach the centre, paler and softer. For a certain time these clots contribute to sustain the parietes; but, in accumulating, they ultimately contribute to accelerate the rupture of the sac by causing ulceration of its walls.

It is singular how rapidly clots are deposited in the smallest aneurismal sac, if the internal tunics be destroyed, whilst they are often wanting in the largest dilatations when the tunics are entire. Certainly the diminished movement of the blood is not the only cause of the coagulation; and we are constrained to admit, that the membrane with which it is in contact exercises some influence on this phenomenon. Coagulation of the blood is one of the most constant consequences of inflammatory action in the arterial parietes. The cellular coat, irritated by a fluid which is new to it, becomes the seat of a low degree of inflammation, but enough, however, to produce coagulation of the blood which is in contact with it. A proof of this is furnished by the lymph which is found on the surface of the sac; but, although this matter is often secreted, I know of no positive case of complete adhesion of the coagulum to the sac. Destruction of the internal tunic is not, however, absolutely necessary to ensure the deposition of coagulum in a sac; the low inflammatory action excited by the deposits, of which I have already spoken, is sufficient for this purpose.

Changes in the sac.—As the sac increases in size, its parietes increase in thickness, at least for some time; in some cases becoming very thick, fibrous, or even cartilaginous. Some aneurismal sacs experience a thinning at several points; the tumor may extend irregularly in the several directions where the thinning occurs, and the appearance of secondary sacs is presented. The adhesion of this sac to surrounding parts is more or less intimate. A sac may be very small, and may rupture before adhesion is advanced enough to resist the impulse of the blood which escapes into the adjoining tissues. Hodgson gives the case of an old man, who, whilst walking, felt a sudden pain in the

middle of the right thigh; he looked at the part, and perceived a small swelling. The pain increased, the tumor enlarged, and, in a few hours, the whole limb was cedematous. The tumor was compressible, but it was only a few hours before death that any vibratory pulsation could be distinguished. The man became very feeble, the tumor enlarged, and, in three weeks from its first appearance, he died. The muscles of the thigh, separated from each other to a vast extent, were filled with coagulated blood; which, in the triceps, hollowed out a large cavity. The artery communicated with this sac by a small round opening, not larger than the ordinary calibre of the vessel. This opening was evidently that of a small aneurismal sac, which had suddenly given way, and had given rise to extensive extravasation. The original sac was not larger than a pea, and was formed by a partial dilatation of the arterial tunics, which were thickened, and encrusted with calcareous matter.

Certain changes happen in the neck of the sac: commonly, the opening is irregular, the edges jagged and floating, and it is usually situated at the centre of a kind of septum, formed by the perforated internal and middle tunics. These membranes very commonly terminate at the neck of the sac, presenting a kind of rim or collar; sometimes, however, the membrane of the cyst is continuous with the internal tunic. This opening does not, however, always correspond to the centre of the aneurismal tumor, which has found less difficulty in dilating towards one point than another. In the extremities, this opening is often found nearer the superior than the inferior part of the tumor. If the ulceration extend, this septum may disappear; and the neck is then more or less completely wanting. In Guattani are found two figures which perfectly express this condition: the artery seems to open into the superior part of the sac, and to emerge from the inferior portion. It was just this disposition of sac which induced Sir Astley Cooper to recur to the ligature of the aorta for an aneurism of the external iliac.

Effects of pressure of sac on neighbouring organs.—If a circumscribed aneurism do not increase or interfere with the functions of neighbouring organs, it may be borne long with impunity; but if it go on enlarging, no organs seem to be capable of resisting its destructive influence. At first these organs are pushed aside; but, as the tumor makes progress, it adheres to them, and then they begin to suffer. Muscles, tendons, nerves, and other tissues, are disorganised; the bones, spite of their solidity, constantly acted upon by the pulsation of the tumor, are ultimately hollowed out, the periosteum disappears, and, at

last, under the influence of the pressure they experience, are absorbed and destroyed. It is not caries or necrosis under which the absorption is determined; no debris are seen, and no alteration of the remaining part is apparent. The articular and fibro-cartilages resist this influence longer than any other organs, but they at last give way. This circumstance explains the symptoms which are often accidentally developed in the course of its progress. Nerves disorganised or destroyed, explain the pain, the numbness, the cramps, occasionally felt. As to the arteries, the tumor exercises considerable influence upon them; by the compression it occasions, the arterial canal is lessened, and the superior branches are dilated to supply parts beyond the tumor. This is a very important circumstance, which prepares for the success of an operation. All operations of this kind succeed best in cases in which old aneurismal tumors have in that way prepared the collateral circulation; and, indeed, it caused the adoption of the principle, that it is wise to delay the operation until the tumor has acquired a certain bulk, and prepared the collateral circulation for the event. Still the principle must not be pushed too far.

Termination.—If art do not interfere, the tumor, by destroying one organ, and pushing aside another, approaches either the surface, or one of the great cavities; it increases in size, and ultimately bursts. How this result is effected it is not easy to say; the layers of coagulated matter, by which the sac is filled, are successively formed, and are as much more coherent as they are older, the colouring and fluid portions having been absorbed. Are these concretions organized? Their regular disposition in concentric layers, their tenacity, their adhesion to the arterial parietes, are circumstances which have served to give an affirmative answer to the question. I do not deny the possibility of it, but I have never seen it demonstrated. The regularity of the concretion is no proof of vitality; it is analogous to crystallization. These concretions are a barrier which is efficiently opposed to the rupture of the sac; they seem to increase in proportion to the danger of rupture. But sometimes the impulse of blood overcomes the resistance, and then it finds a way through the concretions, gets between them and the walls of the sac, which it irritates, and rupture follows. Most frequently, however, the morbid action which takes place in the parietes ends in the secretion of pus, which is infiltrated through the contents of the sac, and produces a fluctuation where before all seemed unyielding. This fluctuation in a case of aneurism of the aorta, not many years ago, induced in the mind of a practi-

tioner an idea of abscess; it was punctured, pus flowed, then a few drops of blood, and in a few days the patient died, though not from hæmorrhage. The moment of perforation in such a case is often that of death, unless the opening be very small. Sometimes the opening is a mere crack, and only very small quantities of blood escape, and then life may be extended days or weeks.

Symptoms.—A true external aneurism is presented under the form of a tumor, usually indolent, circumscribed, and rounded, compressible and elastic, whose progress is usually slow, until the internal and middle tunics give way. This tumor, situated in the course of an artery, is accompanied by pulsations isochronous with those of the arteries; it may be lessened or even disappear under compression, or even when pressure is made upon the artery above it; on the contrary, it enlarges, and its pulsations are stronger, when the artery is compressed beyond the tumor; it does not interfere much with the motion of the part, and the colour and temperature of the part are not changed. Having remained for some time in this condition, it undergoes certain changes; under some effort, or even without, the tumor enlarges rapidly, the patient sometimes experiencing a sensation as if something gave way, the tumor becomes firm, unequal, and pressure no longer causes it to disappear; the pulsation in it becomes more obscure, being often reduced to a mere thrilling sensation. Any pulsation which may exist, at once disappears if the artery above be compressed, but at that time the bulk of the tumor remains unchanged; the skin over it may be distended, thinned, sometimes inflamed, or even surrounded by a gangrenous spot; pain may be felt in the tumor, or in the limb beyond it, the subcutaneous veins are sometimes varicose, the limb more or less œdematous, benumbed, and even cold.

Symptoms so numerous and so characteristic would appear to be sufficient in all cases to prevent mistake, yet unfortunately how often have aneurismal tumors been mistaken for abscess, and opened by an incision which has quickly caused the death of the patient! It is an error which can scarcely happen when the tumor is small, because the pulsation of the tumor, and its disappearance under pressure, are so characteristic, that we cannot doubt of its nature. But when the disease is advanced, the tumor large, filled with clots, pulsations indistinct or absent, and compression bringing no change in its bulk, difficulty in diagnosis is much increased. In such a case, the examination must be very carefully made; the earlier history must be minutely considered before a decided opinion is expressed; if we learn

that at first it was very small, that it has gradually increased, and that afterwards, after some effort, or without any apparent cause, it has suddenly increased; if at its commencement it has presented pulsations, which have gradually lessened, and at last entirely ceased—if compression, which at first caused it to diminish or to disappear, no longer produces in it any sensible change—we may say with certainty that the tumor is an aneurism. But in the greater number of cases, the earlier history of the disease is unsatisfactory; the difficulty is even increased by the absence of the characters of aneurism, the presence of those of abscess, and the tumor is opened: this has, many times, unfortunately happened. An aneurism has many times been mistaken for an abscess; so tumours of various kinds, situated in the course of large arteries, have been confounded with aneurism. Still the history of the disease, and the beating of the tumor, may furnish sufficient information to detect the disease. Aneurism, at its commencement, is a soft tumor which disappears under compression, most other tumors are as much firmer as they are less advanced, and do not disappear under pressure. As an aneurism advances, it loses its softness, as it increases in bulk, and this change in its consistence always extends from the circumference to its centre, so that this point is still soft when the base has become hard. In abscesses which soften with the progress of suppuration, fluctuation is always found at the centre, and extends to the circumference. In aneurism, the beating is manifest, whatever be the attitude of the limb, in other tumors, which are moved by the pulsation of the artery, this symptom ceases to be sensible when such an attitude is given as will change the relation of the vessel with the tumor. The beating in aneurism is as much more marked as the tumor is small, and the coagula in the sac few; the beating in tumors of other kinds is as much stronger and extensive as the tumor is larger, because they press more heavily upon neighbouring vessels, and increase the lateral effort of the blood. The beating in aneurism is a true expansion or dilatation, sensible over the whole circumference when the tumor is not large, nor of long standing; sensible only at its centre, and obscure or absent at the base, when the sac is large and filled with coagula, whilst the beating of other tumors is a simple displacement of the whole mass, sensible in its whole extent, and, as it were, perpendicular to the axis of the vessel by which it is communicated. From all this it results, that in many cases it is impossible to give an opinion whether a tumor placed in the course of a large artery be an aneurism or

some other tumor. In these doubtful cases, it were best to treat the case as if the tumor were aneurismal. Following this rule, it may undoubtedly happen that we shall refrain from meddling with some tumors which should be opened, but the inconvenience of this plan of proceeding cannot be compared with the danger to which a patient is exposed when an aneurism is opened for an abscess. It is particularly in the treatment of tumors of the trunk, the neck, the axilla, or the groin, that this prudence and circumspection are especially necessary; in those of the extremities, we may restrain the hemorrhage by compressing the artery above the tumor; but even then, before opening a suspicious tumor, all things necessary for the ligature should be at hand.

GUY'S HOSPITAL.

From the Report of the Commissioners for inquiring concerning Charities.

JOINT REPORT OF MR. SMITH AND
MR. MARTIN, DATED JUNE 1837.

THOMAS GUY, Esq. of the city of London, having obtained from the governors of the Hospital of St. Thomas, in Southwark, a lease of a parcel of land for 1000 years, commenced the erection thereon of a building intended for an hospital. By his will, bearing date 4th September, 1724, after various bequests to several persons, and after giving an annuity of £400 a-year to Christ's Hospital, that his executors, or the incorporated trustees of his property, might have perpetual right to nominate four children yearly to be received and educated there, and after leaving sums for the support of alms-houses at Tamworth, (Stafford), and for many other charitable purposes, he proceeds to the bequeathing of the property by which this Hospital, which bears his name, was completed, and has been since in part maintained.

After the payment of all the bequests mentioned in the previous part of the will, he gave all the rest of his property to Sir G. Page, Bart.; C. Joy, Esq. treasurer; and W. Clayton, T. Hollis, J. Kenrick, J. Lade, Esqrs. governors of the then Hospital of St. Thomas; and to Dr. Richard Mead, M. Raper, Esq. and John Spruit, likewise governors of the said Hospital, and their heirs, &c. upon trust, for the purposes afterwards directed. These trustees, till an Act of Parliament could be obtained to incorporate them, and certain others mentioned, were, from the property which he left, to finish and fit up the two new squares of building in Southwark which he had some time since begun, and intended for an hos-

pital; and to build such other offices as they deemed necessary, and furnish the same with all conveniences, for 400, or more, sick and poor persons, who might be thought capable of relief by physic or surgery. They were authorised, however, to receive a number of patients, not exceeding 20, lunatics, or any others who, being deemed incurable, could not be admitted into St. Thomas's Hospital, or others similarly constituted; and these 20 were to be chosen, by the trustees, from among the patients dismissed as incurable from St. Thomas's, or, after them, from any poor persons who might apply. The patients received into the Hospital were to be provided with food, physic, and all other necessaries during the remainder of their lives, or as long as the trustees might deem fit; and, in short, all the arrangements, except those for incurable patients, were to be made as near as might be according to the customs and usage that, of late years, had prevailed in St. Thomas's Hospital.

For the more secure and permanent management of the Hospital, he earnestly requested that his executors and trustees would forthwith, after his decease, endeavour to obtain letters-patent, or an act of Parliament, incorporating them, and all who were alive and willing to act of 51 others, governors of St. Thomas's, whom he particularly named, and as many others as they might deem necessary, to make up a body of 50 at least, and not exceeding 60, to form a distinct and separate body politic and corporate, with perpetual succession, for the government of the Hospital. He desired that, by the letters-patent, a president and treasurer, and such other officers as might be deemed necessary, should be named and appointed, to be successively elected and admitted, and have perpetual succession; and that, by the same letters-patent, a committee of 21 members of the incorporated body should be named, and have granted to them such powers as might enable them, in the most efficient way, to settle and apply the property devised to the Hospital. Seven of this committee were to go out, and seven to be elected annually; their management and accounts to be submitted to a general court of the whole body of governors or members of the intended corporation. It was also desired, that in the same letters, if they could be obtained, it should be provided, that the future elections of the president and treasurer, and also of the physicians and surgeons, and of the clerk, solicitor, and chaplain, should be reserved to the general court of governors; and that the offices of apothecary, steward, matron, cook, sisters, and all other officers, should

be elected by the committee (of 21). As soon as the act of incorporation could be obtained, the trustees appointed in the will were to transfer all the property to the incorporated governors, upon the same trusts as they had themselves held it; and the governors were to invest the money thus received in the purchase of messuages, lands, and other estates of inheritance, that there might be a perpetual provision for the maintenance and cure of the sick poor, and for defraying all other expenses of the Hospital.

Mr. Guy died on the 27th of December, 1724. The administration of the estate was attended with considerable difficulty, in consequence of the very numerous legacies and annuities to distant relations; and, although every diligence appears to have been used, and large sums were at once made available for the prosecution of Mr. Guy's intentions in completing the buildings, and bringing the charity (which, at the time of his death, provided 60 beds) into operation, about seven years elapsed before the proceeds were considered as realized. In October, 1732, an account was opened in the name of the president and governors, and the sum of £220,134. 2s. 7½d., was carried over to it as the balance of Mr. Guy's estate.

The act of Parliament which Mr. Guy had desired in his will should, if possible, be obtained for the incorporation of the governing body of the Hospital, was passed in 1725; and, with no important alteration, the wishes expressed by him were complied with in its enactments. The number of governors being limited to 60, it was enacted, that in case the number should at any time, in consequence of the neglect of filling up such vacancies as might occur, or from any other circumstances, not amount to 40, it should be lawful for the Lord Chancellor, or Lord Keeper, or Lords Commissioners of the Great Seal, the Chief Justices of the King's Bench and Common Pleas, and the Chief Baron of the Exchequer for the time being, or any two of them, at the request of any five or more of the members or governors, to nominate as many fit persons as should, together with the others, make up the number of 50 governors; and that such persons should thenceforward be deemed governors to all intents and purposes.

The first general court of the president and governors, under the provisions of the act, was held 5th of April, 1725; and, on the 21st of the same month, the physicians, surgeons, and clerk to the new hospital, were elected, and it was referred to the court of committee to prepare by-laws for the management of the institution.

Funds of the Hospital.—The proceeds of

Mr. Guy's bequest have been invested, at different times, in the purchase of real estates in the counties of Essex, Hereford, and Lincoln. Extensive purchases have also been made, at a more recent period, of freehold and leasehold property in the vicinity of the hospital; the cost of which has been, in great measure, defrayed out of a very large bequest made, in 1829, by William Hunt, Esq.

That gentleman, who during his life took great interest in the prosperity of the institution, and had actively co-operated with Mr. Harrison, the treasurer, in his plans for its improvement and extension (many of the purchases and alterations in the neighbourhood being made with his approbation, and in anticipation of the legacy which he had confidentially signified to the treasurer that it was his intention to make), by his will, dated December 1, 1825, and proved in 1829, after various specific and pecuniary bequests and annuities, and after bequests of 1000*l.* each to St. Thomas's Hospital, the Refuge for the Destitute, and the Philanthropic Society, left to his executors, Benjamin Harrison, John Benjamin Heath, and Fuller Farr, and their executors, &c. all his personal estates and effects whatsoever, and all such stock in the funds as he should possess at his decease, in trust to pay, assign, and transfer to the president, treasurer, and governors of Guy's Hospital. The only desire expressed in the will, relative to the mode in which the money should be disposed of by the governors of the hospital, was, that additional buildings and other conveniences should be supplied, for the reception of 100 more persons than were provided for by Mr. Guy.

The residue of Mr. Hunt's estate, paid over to the hospital as stated in the Abstract of the Accounts for the year ending March 25, 1831, consisted of

75,000 <i>l.</i> 3 per cent. consols.
60,000 <i>l.</i> „ reduced.
60,000 <i>l.</i> new 3½ per cent.
9140 <i>l.</i> 2 <i>s.</i> 3 <i>d.</i> cash.

The stock was valued at 186,675*l.*; thus making an amount of 196,115*l.* 2*s.* 3*d.* sterling. The annuities were valued at 2725*l.* 5*s.* 1*d.*; leaving a clear sum of 193,389*l.* 17*s.* 2*d.* applicable to the purposes of the charity.

The other benefactions to the hospital have amounted to little more than 10,000*l.*

The following is a summary of the possessions and income of the hospital in 1835, and of the annual payments under the wills of Mr. Guy and Mr. Hunt:—

	£.	s.	d.
Bardfield estate (Essex)	2687	18	11
Beaumont do. do.	2321	19	10
Leeze Priory do. do.	2778	8	3
Herefordshire estates	7366	17	11
Lincolnshire estates	7278	19	0
Southwark estates	2298	9	4
Fee Farm-rents from Dean } and Chapter of Rochester }	124	6	8
Annuity from the Stationers' } Company }	125	0	0
63,000 <i>l.</i> 3 per cent. consols. . . }	3690	0	0
60,000 <i>l.</i> 3 per cent. reduced } Casual profits in 1835 }	1005	17	5
Total gross income	29,677	17	1

Payments.

	£.	s.	d.
Annuity to Christ's } Hospital }	400		
Tamworth almshouses, 115			
Reserved for appren- } tices }	10		
Hunt's annuitants ..	230		
	755	0	0
Balance	28,922	17	4

On an average of six years, ending 1836, the income of the hospital was 30,491*l.* 1*s.*; and the out-going, for quit-rents, land-tax, building, repairs, and other incidental expenses, amounted to 9708*l.* 13*s.* 3¼*d.*: so that it appears that the clear annual income applicable to the special purposes of the charity, is nearly 21,000*l.* a-year.

Government of the Charity.

The number of governors is kept up as prescribed by act of parliament; election being made at a court of committees, where a majority of votes is sufficient. The present list of governors (Nov. 1835) includes 57 names. It is not the practice to fill up vacancies as they occur, and consequently several governors are usually chosen at the same court; a list being presented by the president or treasurer. No division has ever taken place; no donation is required, and the appointment is for life.

A general court is held annually, in November, when the election of the court of committees takes place; each governor giving in a list containing twenty-one names (exclusive of the president and treasurer), seven of whom must not be members of the existing court. At these several courts, the president, treasurer, auditors, and the physicians and surgeons, are chosen; and the presentations are made to the livings belonging to the corporation. Little other business is transacted at them, beyond the confirmation of the minutes of the courts of committees. The governors dine together, in the court-

room, in May and November; the expense, which does not exceed 50*l.* altogether, is defrayed by the hospital.

The committee of twenty-one meet, as occasion requires, for the despatch of business; eight members (of whom the president or treasurer must be one) form a quorum. There are no sub-committees. None of the governors derive any emolument or perquisite whatever from the office, except the treasurer, for whom a commodious residence is provided in the hospital, with wash-house and stabling, and coals, beer, and candles for his servants. The only privilege they enjoy is the right of each, in his turn, to recommend a lunatic for admission to the hospital.

The officers of the establishment are as follows:—

The President, Mr. Justice Pattison. His duties are, to direct the holding of the courts and committees when he shall see fit, and to preside at the councils, and exercise a general superintendence. His duties have, however, for some time devolved upon the treasurer.

The Treasurer, Benjamin Harrison, Esq. succeeded his father in the office in 1797; having previously passed twelve years with him in the hospital. Though no longer resident within its walls, he attends for several hours daily, Sundays only excepted. The management of the estates and revenues is in his hands, and he examines in person into the most minute details of every branch of the establishment; and the governors have been principally influenced by his advice in the various additions which have been lately made to those in London. No salary is attached to the office. Ten guineas are allowed for postage and parcels, and two guineas for petty expenses. No security is required from him. No banker is appointed for the hospital, and the account is kept in the treasurer's private name; but it is not at this institution as at many others, a recognized mode of remunerating this officer to allow him to retain large balances in hand; on the contrary, the hospital, prior to Mr. Hunt's bequest, was usually indebted to the treasurer, or the balance in his hands was not more at any time than 400*l.* or 500*l.*, except on one occasion, when a balance between 7000*l.* and 10,000*l.* was standing to his credit for about three weeks, in consequence of an unexpected delay in the completion of a purchase; and at this time the hospital was indebted to him upon a loan of 16,000*l.* All permanent advances of this description are reported to the committee, and, in these cases, interest at 5 per cent. has been carried to the credit of the treasurer; but it has frequently happened, that for short periods he has been in ad-

vance to the hospital, without the allowance of any interest at all.

Every article of expenditure is under the control of Mr. Harrison. He makes the larger payments on account of the hospital himself, the smaller demands being discharged by the steward, who receives cheques from him for the purpose. He appoints the sisters and servants of the institution, and regulates the attendance of the medical and surgical officers. The schools are exclusively under his control.

The other officers, the registrar or clerk, the chaplain, the steward, clerk of the works, &c. are similar to those at St. Bartholomew's and St. Thomas's (see preceding numbers), and their duties are nearly the same.

The officers and servants of the medical establishment are, three principal physicians, three principal surgeons, a consulting surgeon, assistant-physician, assistant-surgeon, accoucheur, surgeon-dentist, apothecary, matron and assistant, surgery-man and assistant, keeper of the museum, janitor, 24 sisters, and 24 nurses.

Two days in each week are fixed for the attendance of the physicians and surgeons, and in each week one of each attends in rotation on the principal taking-in day. All the cases admitted by either the physician or surgeon on this the regular day of admission, as well as all cases of accident or emergency admitted on other days during his week of duty, remain under his exclusive care while in the Hospital. The surgeon of the week also attends daily in the wards at half-past 12 o'clock. It was stated that in practice the attendance of the medical officers is much more frequent than is actually required of them by the regulations of the Hospital, each visiting his own patients as often as the urgency of the case requires; and it rarely happens that for several days after his taking-in day, any of them are absent for twenty-four hours together: the hospital is frequently visited by them all in the course of the same day.

The salaries paid by the hospital funds remain at the same amount (40*l.*), at which they were fixed in 1725; the only pecuniary emolument worth consideration being derived from the fees of pupils admitted to the practice of the hospital or to attend the lectures.

The assistant-physician receives no salary from the Hospital, but a payment is made by the treasurer from the pupils' fund, on account of chemical lectures given by him. Besides attendance on the out-patients every Friday at 11 o'clock, he in general visits the hospital daily, and attends to the patients of any of the physicians who chance to be absent, and occasionally supplies their places on the admission day.

The duties of the assistant-surgeon are nearly analogous to those of the assistant-physician: he is required to give immediate attendance in all cases of accident or emergency, and, if necessary, to see every surgical patient in the absence of the surgeon of the week: he lives in the immediate neighbourhood of the hospital. He receives at present no remuneration beyond 150*l.* a year, paid by the treasurer from the pupils' fund.

The time spent by the medical officers on their visits varies according to circumstances: nearly four hours are usually required to go round the house.

Each surgeon is permitted to select from his pupils four persons to be dressers: they are not chosen for talents or proficiency, but in consideration of the payment of an additional fee, usually fifty guineas for 12 months. Three of them are in constant attendance at the hospital, where rooms are provided for their residence. Their duties are to dress wounds, and to do whatever else may be necessary for the patient till the arrival of the surgeon or assistant-surgeon.

The consulting surgeon is consulted by the surgeons in all cases of danger or difficulty, and advises upon the expediency of proposed operations. The ordinary period of his attendance is on Tuesday in each week. He receives no salary.

The accoucheur and dentist are both lecturers in the medical school, and are appointed by the treasurer without consultation with any of the other governors.

The apothecary, besides the ordinary duties of his office in dispensing medicines and superintending the laboratory, visits the wards daily; and in the absence of the physicians and surgeons, attends to the medical patients, and the medical treatment of surgical cases. He is present at the general taking-in, and advises on the reception of other cases in the week; he never leaves the hospital without notice; nor for three or four hours without permission from the treasurer; he is not allowed to practise on his own account: he purchases the drugs under the direction of the treasurer; those of smaller consumption from three or four druggists; those of which larger quantities are required, in the market through the agency of drug-brokers, or at wholesale houses: his salary is 300*l.* a year from the hospital funds.

The surgery-man and cupper receives 90*l.* a year and has a residence in the hospital. All the surgical instruments are in his charge, and he has to be present at all operations; he cups both in and out-patients to the amount of about 5000 in a year.

The keeper of the Museum, with a salary

of 78*l.* a year, has the charge of the schools, the museum, and the anatomical preparations.

The janitor, with the same salary, attends the various lectures and operations, and accompanies the physicians and surgeons to the wards in clinical time, to prevent the intrusion of unprivileged persons; he regulates the admission of visitors to the patients, and is called in in all cases of irregularity or disturbance.

The matron performs all the same duties which are assigned to that office in other hospitals, having the charge of all linen and furniture, the general superintendence of all the wards, and the hiring and dismissal of nurses; her salary is 100*l.* a year, and a house in the immediate neighbourhood of the hospital is provided for her.

Of the sisters, one is attached to each ward for the general care of the patients and the superintendence of the nurses; rooms are provided for them as in other hospitals, contiguous to their several wards; their average wages are 50*l.* a year. They are usually selected from a higher class of females than the nurses, and are frequently widows in reduced circumstances.

The nurses are paid on an average 30*l.* a year.

Admission and Management of Patients.—The admissions are quite independent of character—all comers being received. Security from a householder for the burial of patients in case of death was formerly required, but is now seldom asked for, and the removal of this restriction has greatly extended the benefit of the charity among the poorer classes: for pauper patients 9*l.* a day is required from the overseers of their respective parishes, but the payments of these demands is made with great reluctance, and is very generally evaded. Sailors belonging to the Royal Navy, if their cases are sufficiently urgent, are received on a recommendation from the Board of Admiralty: the expenses incurred for washing being defrayed by the Victualling Board. Pregnant women are not admitted, unless under peculiar circumstances; and lunatics, (with the exception of the limited number of incurables who are received in accordance with the will of the founder,) are also inadmissible. No diseases on grounds of exclusion, except those reputed epidemic (contagious?), and for these, as in the case of the cholera, separate wards are prepared for such cases as may occur in the hospital.

Wednesday is the regular "Taking-in Day" in each week. Applicants must be present before ten in the morning: on their arrival they hand in printed petitions, furnished by the hospital, which are then filled up by the steward's clerk from the

information of the party, with the name and age, the nature and standing of the disease of the applicant. These petitions being then divided according to the medical or surgical nature of each case, each applicant is examined separately by the physician or surgeon of the week. The petitions are then marked by the examining officers according to their respective urgency: those which are extremely pressing are admitted instantly; the others are taken to the steward, and arranged by him according to the marks indicating their urgency; and when all are examined, the treasurer and governors, if any happen to be present, admit as many as will fill the vacant beds. The average number of applicants, in the six years preceeding the inquiry, was 94 weekly, of whom, on an average, 41 were admitted; but this does not include many who applied with disorders too slight to afford them a chance of admission. Those who are rejected for want of room are prescribed for at once, and, if necessary, made out-patients. Accidents and all other cases of sufficient urgency are admitted on other days as well as Wednesdays; and the average number of such cases appears to be 18 per week. For obstetric cases, ten beds are set apart. For eye cases, eleven beds are appropriated in one ward for females, and sixteen in another for males. No other classification of cases is made, except that syphilitic cases are placed in separate wards.

The average number of patients admitted annually (1830-1837,) is nearly 2400.

The total number of beds in the hospital is 538, though, on an emergency, 600 could be at once fitted up. These are disposed as follows:—

1 male accident ward	24 beds.
1 female do.	15
1 for venereal women	20
1 for venereal men	35
2 for surgical cases exclusively	66
12 for general purposes	290
1 for male eye cases	16
1 for female do.	11
1 for convalescent patients ...	10
1 for obstetric cases.....	10
1 for patients requiring to be kept apart from others	7
For patients infested with vermin, or nearly insane, or in a state of frenzy	10
2 galleries for incurable female lunatics, each of whom has a separate sleeping-room adjacent to the gallery	24
	<hr/>
	538

Two wards (one for each sex) are set apart in each year for the reception of clinical cases, which are selected in consequence of symptoms indicating the neces-

sity of constant and extreme watchfulness, or because they are likely to prove interesting and instructive. The clinical lecturer attends daily in these wards with his pupils, and makes observations on each case as he visits it. Those patients to whom absolute repose is necessary are passed by, and the patients in general are not incommoded by the visit, their health and comfort being considered in preference to the success or utility of the lecture. Two pupils, appointed by the clinical lecturer, take in rotation to attend in the clinical wards from ten in the morning till the evening; and a discretion is given them to vary the quantity of medicine prescribed, or to suspend the administration of them.

A Clinical Report Society has been lately formed among the pupils of the house, with the approbation of the treasurer. Reporters are assigned to each ward, and the clinical reports of nearly every case are made by them. The first annual report was made in 1837, when the cases brought under the notice of the society were as follows:—

1037 entered in a tabular form
1264 completely transcribed in a tabular form
174 detailed at length

2475

The out-patients may be divided into four classes. Of medical and surgical cases of a general character, the former are admitted as out-patients on Fridays; the latter, on Thursdays. They receive, on application, a printed form, which remains in force for four weeks, but has been, in some instances, extended to ten months. They attend at the hospital on the same day of the week as that on which they were admitted, and are furnished with medicines: they are also, if necessary, seen on Tuesdays by the medical officers who happen to be present. They are taken into the hospital when their cases are sufficiently urgent to require it, and, when there, they remain under the care of the assistant surgeon or physician, and are placed in wards which are usually filled entirely with patients thus admitted.

Out patients, with diseases of the eye, are admitted on three days in each week. Operations are usually performed on Thursdays.

Obstetric out-patients are persons whose pregnancy or confinement is attended with disease. They attend on four days in the week, and, when necessary, are admitted into the hospital under the care of the physician-accoucheur.

Lying-in cases, in which poor married women are attended at their own houses: a previous personal application is necessary at the lying-in office in the hos-

pital, where one of the sisters is appointed to attend for the purpose. An inquiry is made into the case before any assistance is afforded. Medicine and occasional diet are afforded to them. They are attended by the lecturer on midwifery and his assistants.

Dental cases are attended to on Fridays.

The following statement, furnished by the treasurer, gives the nearest approximation that can be made to the number of out-patients:—

	per ann.
60 surgical tickets issued per week, amounting to	3120
80 surgical casualties per day, estimated at	24000
30 eye cases per week	1560
90 physicians' tickets per week ..	4680
6 cases per day relieved at the apothecary's shop	1800
20 obstetric cases per week	1040
30 lying-in cases per week	1560
Total	37,760

Hospital accounts.—The receipts of the hospital have been already mentioned in detail, and the average, available for the purposes of the charity, shewn to be nearly 21000*l.* a year. Among the disbursements, the most important items among the hospital expenses, taking the average of ten years, for each of which the exact sums are stated as follows:—

Rent, taxes, rates, &c. about	£1200
Repairs	2500
Officers' salaries and servants' wages ..	5560
Fuel, lighting, soap, and water	1500
Medicines	3100
Tradesmen's bills for provisions ..	4500
Furniture and washing, about	1400
Stationery, printing, &c.	150
Petty expenses of treasurer, steward, and matron	40

The annual balance in the treasurer's hands, if any at all exist, is not more than sufficient to meet immediate current expenses, and varies usually from four to five hundred pounds, the whole actual income being expended for the purposes above-mentioned, and for some others of less importance, and less constant amount.

The following table is given of the average daily cost of each patient:—

Provisions, &c., including bedding, soap, water, linen, washing, and medicine	s. d.
Lodging, including rent of leasehold, taxes, &c.	0 2.16
Salaries, servants' wages, &c.	0 8.44
Incidental expenses	0 3.67
Law expenses	0 1.18
Total	2 6.10

Medical Schools.—It appears by an entry

in the minute books, dated Feb. 26, 1760, that an arrangement was at that time entered into with the governors of St. Thomas's Hospital for extending the privilege of attending the practice of each establishment to the pupils of both. This was further regulated by some resolutions passed in November 1768, and for many years the advantages thus offered were reciprocal.

Medical lectures only were delivered at Guy's, while surgery, together with anatomy, were taught at St. Thomas's, and the profits arising from the pupils' fees were divided between the lecturers of the two institutions. A close connection was thus established between the houses, and the officers of the one were frequently appointed lecturers at the other. For many years, Sir Astley Cooper, who was surgeon at Guy's Hospital, was lecturer in the anatomical school of St. Thomas's. In 1825, a dispute arose between the hospitals respecting the appointment of a demonstrator and under-lecturer at St. Thomas's; and it was then resolved, that the means of surgical education should be provided within the precincts of Guy's Hospital. The schools, museum, &c., were therefore built, and Sir A. Cooper appointed lecturer on surgery; he was desirous of giving his anatomical collection, then deposited at St. Thomas's, to Guy's, but the former establishment refused to surrender it, but ultimately gave Sir A. Cooper 1000*l.* for his interest in it, which sum he presented to the new medical school of Guy's.

For the building of the schools 7000*l.* were advanced by the treasurer. The interest for the first year was paid from the funds arising from pupils' fees. From that time to 1830, it was paid from the hospital funds; and in that year the principal was repaid out of Mr. Hunt's legacy, with whose approbation the building had been erected. Altogether, about 8000*l.* has been paid from the hospital funds for the establishment of the schools and museum, which are also kept in repair from the same source. Since their completion, a very valuable collection of models and preparations has been formed at the cost of the funds of the medical and surgical school, which, being made the actual property of the hospital, may in some degree be considered as a remuneration to the charity for the sums expended on the building.

Excepting so far as regards the prime cost and repairs of the building, and the salary of the keeper, the schools are wholly independent of the funds of the foundation. The pupils' fees for attendance on the hospital practice and the lectures are paid into the hands of the treasurer, and the governors have implicitly and wholly delegated to him, not in his official capacity, but as a private individual, the ma-

nagement of the schools and museum, reserving to themselves only the power of withdrawing the permission to use the building for its present purposes.

From these funds, after deducting the expenses of attendants, &c., for the lectures, 150*l.* a-year is allowed to the assistant surgeon, and salaries are paid to the modeller, and the anatomical draughtsman and his assistants. The lecturers are selected and appointed, and the amount of fees paid by the pupils determined by Mr. Harrison alone, who likewise regulates the mode and proportion in which each gentleman is to be remunerated for the instructions which he affords. The accounts of this fund are wholly unconnected with those of the hospital, and are in the private possession of Mr. Harrison.

General Remarks.—These include brief statements of the principal arguments which are commonly advanced on the comparative merits of the plan adopted in some continental hospitals, of appointing a single medical officer with a remunerating salary and competent paid assistants to reside within the walls, and devote his whole time to the hospital, abstaining from private practice, and of the system of this and most or all other hospitals in this country, where the salaries from the funds of the charity are trifling and the indirect advantages and the pecuniary profits from the schools considerable. There are also added the arguments in a few words for and against the system of admitting many patients on but one day in each week; but no decided opinion is expressed on either of these points, though the feeling of the commissioners seems to incline to the continuance of the present system.

The existence of the schools, independently of the profit which the medical officers receive from them, is mentioned as highly beneficial to the charity, by making the officers of the establishment feel that, under the scrutiny of competent judges among the pupils, their reputation is constantly at stake. With regard to the clinical pupils also, it is remarked, that besides the good resulting to medical science, it is obvious that the objects of the charity are greatly promoted by the constant presence of young men, whose medical attainments render them more capable of judging of the progress of disorders than ordinary nurses.

Some observations are made on the management of the lunatic patients, in which it is submitted that a very considerable improvement might be made, and the report closes with the remarks upon the powers exerted by the treasurer, which were quoted in the number of this journal for March 13th, p. 922.

FRACTURE OF THE LEG; WITH SOME PECULIAR CIRCUMSTANCES.

To the Editor of the Medical Gazette.

SIR,

I BEG leave to transmit the particulars of the enclosed rather interesting case for insertion in your journal.—I am, sir,
Your obedient servant,

GEORGE BUSK.

S. H. S. Dreadnought.
March 16, 1840.

Mr. J. æt. 65, of stout habit, had been more or less paralytic for upwards of twenty years, for the last twelve or fourteen of which he had been completely deprived of all power of motion and sensibility, from the loins downwards. The bowels were habitually constipated, and the feces and urine were passed unconsciously.

The lower extremities were small, from deficiency of muscular substance, but otherwise fat, and in good state of nutrition. There was occasionally slight spasmodic motion in the legs and feet. On the 10th of January, 1840, he went on business, travelling as he usually did in a spring-cart, into and out of which it was necessary to lift him, as he had no power whatever of spontaneous locomotion.

On his retiring to bed, after returning from this expedition, his servant, when undressing him, noticed an unusual flexibility in the left leg, and observed to her master that she thought it was broken; he, at first, did not believe her, but soon ascertained by moving and bending the limb, that such was really the case. He was, however, unable to account for this injury, of which he had been perfectly unconscious, till the discovery was made by his servant.

It is probable that the accident happened upon one of the occasions of his being lifted into or out of the cart. As it was late at night, he deferred sending for surgical aid till the morning, when Mr. Allinson, Surgeon, Woolwich, was summoned, who on his arrival, about 10 A.M. found the limb presenting a very formidable aspect. It was much deformed, from having been allowed to lie on the bed without any support, in consequence of which the foot was turned completely outwards. The tibia and fibula were broken rather below the middle, and the fractured ends much displaced, from the malposition of the

foot; there was, however, no retraction, owing to the paralysed condition of the muscles. The leg, from the knee downwards, was enormously swollen, of a deep purple colour, and the surface covered with large vesications, filled with a red sanies. There was not the least pain nor any sensibility in the limb, but there was frequent spasmodic twitching of the muscles. Mr. Allinson requesting my assistance, I saw the patient in the afternoon of the same day, at which time the swelling had greatly subsided, but the limb was otherwise in the condition above described, and I ascertained beyond a doubt that no reflex motions could be excited in either limb by irritation of the soles of the feet, or other part of the surface. The spasmodic twitching was frequent, but trifling in extent.

The appearance of the limb evidently indicated great effusion of blood into its textures, and there was probably extensive laceration of the soft parts around the fracture, in consequence of the repeated and rough motions to which the limb had been subjected, doubtless for some time after the infliction of the injury. Under these circumstances the fate of the leg appeared rather doubtful. However, we determined upon the attempt to save it if possible. The leg, surrounded with a many-tailed bandage, was placed on a pillow, and supported by a wooden splint on either side. The bandage was kept constantly wet with camphorated spirit lotion, and as every thing appeared to go on well, the applications were not disturbed for a week, when it was found that the swelling had fallen very considerably, and the colour and general aspect of the limb were much improved. The same plan was pursued for another week, by which time the swelling and redness had nearly disappeared, and the fracture was less loose. As it was necessary to move the patient frequently to prevent excoriation of the nates, upon which he constantly sat, it became advisable to treat the limb so as to allow of his being readily moved. Consequently the leg was covered with layers of lint dipped in mucilage, and a bandage applied, which in a day or two formed a sufficiently hard case to allow the limb and body to be moved freely without danger of displacing the fracture.

Mr. J. about this time became very unwell; he had a troublesome cough, and

could not sleep at nights, and appeared to labour under very considerable constitutional disturbance, the cause of which, however, was not very manifest, as it could not be referred in any degree to the state of the leg, which never afforded any uneasiness.

On my next visit, about three weeks afterwards, I removed the gum splint, which had not been disturbed from the time of its first application, and I found the bones to be firmly united, without any deformity. The appearance of the leg was quite natural. Mr. J., however, was very ill, and was much reduced by extensive sloughing of the nates, although he suffered no pain, sensibility in those parts being as completely annihilated as in the legs. This sloughing, in spite of the greatest care, continued to extend, and the constitutional disturbance to increase; all nourishment was refused or rejected, and he died on the 5th March.

Unfortunately no inspection of the body was allowed—a circumstance much to be regretted, as it would have been extremely interesting to examine the exact pathological condition of the spinal cord and nerves, in a case where paralysis was so complete, and the power of nutrition and reparation so little impaired. From the absence, however, of all reflex phenomena, and the extent of the paralysis, it may probably be concluded that the lesion was in great measure confined to the nerves constituting the *cauda equina*, and did not implicate any considerable portion of the spine itself.

The slight spasmodic twitching to which the limbs are subject, could hardly be referred to the reflex function of the cord, as direct irritation of the surface had certainly no influence in producing muscular contraction.

The more active movement, which occurred in the injured limb, may readily be explained by the supposition that the torn muscles were directly irritated by the fractured bones.

CUBEBS IN BRONCHITIS.

To the Editor of the Medical Gazette.

SIR,

In a late number of your valuable periodical, I perused with much pleasure, a powerful testimony from the pen of Mr.

Blake, to the efficacy of cubebs in restoring the healthy tone and functions of the schneiderian membrane, in a case of inveterate and confirmed coryza.

I have, during the last two years, been in the frequent habit of prescribing the same drug with great advantage in cases of chronic bronchitis and dysentery. As an illustration of its excellent operation in controlling the former disease, permit me to draw attention to the following case. A. S. æt. 31, had, for a long time previous to consulting me, suffered from the effects of a severe cold, caught, consecutively to some eruptive disease, three winters since. The following were the symptoms, as taken from my notes, when I first prescribed the remedy in question: considerable emaciation, with a carriage and manner expressive of great prostration of strength: a frequent and almost habitual cough, most urgent towards the morning, attended with profuse expectoration of opaque, greenish, muco-purulent matter, mixed with a colourless, watery phlegm, in which the colouring matter of the blood had been occasionally observed. The breathing wheezing and oppressed, particularly after exertion, with scarcely any pain in the chest. Respiration sometimes louder, at other times more obscure than natural, accompanied with the *mucous rhonchus*, with the occasional occurrence of *sibilous* and *sonorous* rhonchi, indicative of partial obstruction of the tubes; but after many examinations, there could be detected neither constant absence of the respiratory murmur, nor pectoriloquy, nor any marked defect of resonance upon percussion. In addition, there were present evidences of slight derangement of the digestive organs. Having convinced myself of the absence of tubercular disease, I immediately resolved upon the exhibition of cubebs, with the view of modifying and ultimately checking the morbid secretions of the diseased mucous surface, and with the happiest results. A marked improvement was speedily discernible in the character and quantity of the sputa, which, with the cough, finally ceased, leaving my patient, in her own animated language, to "enjoy a new lease of life." The treatment was aided by the use of the linimentum ammoniæ as an external counter-irritant, by a change of residence to the southern coast of Devonshire, and by strict attention to regimen and exercise.

Several similar cases might be mentioned as corroborative of the efficacy of cubebs in chronic catarrhal discharges from mucous membranes, but I feel that as a young practitioner it would be immodest to obtrude the results of a very limited experience upon the profession. The foregoing case was, however, so well marked in its results, that I cannot refrain from transmitting this brief notice to the *MEDICAL GAZETTE*, in order that it may be appended as additional evidence to the truth of Mr. Blake's remarks.—Your obedient servant,

JOSEPH B. GRAY.

Duke Street, Chelmsford.

April 2, 1840.

FATAL CASES

OF

OBSTRUCTION AND ENORMOUS DISTENSION OF THE BELLY,

Arising from a peculiar Conformation of the Colon.*

BY ANDREW BUCHANAN, M.D.,

Professor of the Institutes of Medicine in the University of Glasgow.

(With 12 Figures in illustration.)

I PROPOSE, here, to lay before you some observations upon a very rare disease, of which it has been my fortune to meet with three cases. This disease is attended with symptoms which are quite peculiar and distinctive. It produces as much acute suffering as any of the most formidable diseases to which the human species is subject; and, notwithstanding the most powerful means employed to arrest its progress, it has invariably gone on to a fatal termination. It is, farther, interesting to the medical inquirer, from being a disease not generally known, and of which the true nature has not, as appears to me, been hitherto understood.

It will be seen, from the remarks which follow, that the disease in question is always attended with, and, according to my view, is necessarily dependent upon, a peculiar primordial formation of the colon, which, to avoid

* In August last we published an interesting paper, by Dr. Buchanan, on certain peculiarities in the distribution of the colon, but unfortunately without the engravings which ought to have accompanied it. We are now, however, enabled to give these; and they appear to us so curious, that we have thought the best plan, under the circumstances, was to reinsert the text, without which, indeed, they would be unintelligible.—ED. GAZ.

interruption hereafter, I shall commence by describing.

The colon is more subject than any other part of the intestinal canal to vary in length and in mode of disposition; or, which comprehends both, in the course which it follows through the abdomen. Upwards of twenty examples of such variations will be found recorded in the works of Morgagni. The most common of these variations is that observed in the transverse arch of the colon, which, instead of running straight from right to left, immediately under the liver and stomach, is incurvated downwards, so as to reach the umbilicus*, or even the urinary bladder†. Morgagni has recorded an example of the right colon not running straight from the iliac to the hypochondriac region, as it usually does, but instead, being so much inflected that the cæcum was in contact with the transverse arch of the colon under the liver‡. The same author likewise describes a case in which the colon, after observing its usual course as far as the stomach, passed thence right down to the sacrum, in front of the small bowels§. A case will be narrated hereafter, in which the colon, after arriving by the usual route at the left kidney, passed thence to the umbilicus, and from that point right downward, between the tract of the recti muscles, to terminate in the rectum. A double variation in the course of the colon was, in one instance, observed by Morgagni, the transverse arch being inflected downwards; and, further, the left colon, after reaching the kidney, returning to the left hypochondrium, and passing thence obliquely towards the sacrum||. Instances are not unfrequent of the sigmoid portion of the colon deviating from its usual course. It sometimes passes from the left groin across the fundus of the bladder to the right groin, and thence ascending and turning to the left, it goes over the top of the sacrum to form the rectum¶. This is, indeed, described by Glisson as the

usual course of this portion of the colon*. A case is described by Morgagni, in which the sigmoid flexure of the colon lay almost completely in the umbilical region of the abdomen†.

These examples are here adduced, not merely to show how much the colon is liable to vary in its course, but because a knowledge of such varieties is of high importance to the physician, who, if ignorant of them, would, as has been remarked by Morgagni, be apt to fall into error in estimating the seat of many affections of the intestines. There is, however, only one of the varieties enumerated above which has been known to produce a disease at all analogous to that which I am about to describe.

The only variety of conformation in the colon which remains to be mentioned, is of the same kind as the two last enumerated; but I have kept it separate, from its constituting the most common predisponent cause of the disease to be here treated of. That it is a rare variety must be obvious from the circumstance of its having escaped the diligent research of Morgagni‡. While, however, it is very rare in Italy, it may probably be much more common among the inhabitants of the British isles: at all events, within a period of little more than seventeen years, seven examples of this variety of conformation have been observed in Scotland; five of them in Glasgow, and two in Edinburgh; but the individuals in whom they were observed were not all natives of Scotland. Of these seven cases, I have myself seen four. The first I saw was in the year 1819; but in it, and in the two next cases which occurred to me, the peculiar disease arising from this formation of the colon had been induced, and I shall not, therefore, anticipate the history of them. In the spring of the year 1832, in examining the body of a patient who died of cholera, I met with an example of the same formation of the colon, which had not excited any similar disease.

A case of exactly the same kind occurred to Dr. Hunter, Andersonian Professor of Anatomy, in 1831§. The

* Morgagni de Sedibus et Causis Morborum, Epist. xxxiv. art. 2, 3; iv. 16, 30; xix. 19; xx. 16; xxi. 33, 35; xxix. 12; xlvi. 38; lii. 12; lix. 12; lxii. 7; lxx. 7.

† Id., xvi. 8; xxxiv. 2; lvii. 12.

‡ Morgagni. Advers. iii.; Animad. 14.

§ Id. de Sedibus et Causis Morborum, xvii. 25.

|| Id., Epist. 62, art. 5.

¶ Id., Adversar. iii.; Animad. 6.

* Glisson, De Ventriculo et Intestinis, cap. xi. sec. 16.

† Morgagni, Epist. 43, art. 22.

‡ Haller mentions this variety, Element. Physiolog., tom. vii. lib. 24, sec. 15.

§ Glasgow Medical Journal, vol. iv. p. 19.

colon observed its usual course as far as the left groin, when it again ascended as high as the transverse arch immediately under the liver, and then, turning to the right side, it descended into the pelvis. This was exactly the disposition of parts observed by myself, in the case occurring in 1832; and, in both of these cases, it is worthy of remark that the colon entered the pelvis upon the right side of that cavity. In other cases, however, as will be seen hereafter, the colon descended into the pelvis, as usual, over the promontory of the sacrum; and, in one very remarkable case, the colon, crossing from the left to the right groin, ascended parallel to the right colon, and then, turning to the left, descended near the mesial line of the body into the pelvis.

The following more particular account of the form and connections of the colon in the patient carried off by cholera, I extract from my note-book, where it has for title, "Anomalous Distribution of the Sigmoid Flexure of the Colon." The sigmoid flexure of the colon, instead of lying in the left iliac region, and having its meso-colon attached to the left side of the pelvis, stretched obliquely across in front of the small bowels, in the direction of and nearly as high as the gall-bladder. It then turned so as to form an acute angle, and, passing down parallel to the ascending colon, it entered the pelvis on the right side, to form the rectum. Where the colon entered the pelvis, it was attached to the right side of that cavity by a fold of the peritoneum, exactly as is usually seen on the opposite side: the remaining portion of it was kept in *situ* by a very unusual attachment, the omentum supplying the place of meso-colon. The left side of the omentum lay free as usual, on the surface of the small bowels; but the part arising from the right half of the transverse arch, and also that coming from the right colon, embraced the contiguous portion of the sigmoid flexure, and, descending from its inferior edge, terminated by a well-defined margin, at the brim of the pelvis. In consequence of this disposition of parts, the omentum did not admit of being lifted up, as usual, except on the left side; its attachment to the sigmoid flexure prevented it from being raised on the right side, but the hand could be passed between these parts and the small bowels,

showing that there was no adhesion of any kind between them.

Of the deviations from the usual conformation of the colon described above, those occurring at the proximal or middle portions of the intestine do not appear to be productive of any disease or inconvenience to the individuals so constituted*. On the other hand, the deviations which occur at the distal extremity of the colon have been, in several instances, found to accompany a very severe disease, which, so far as I know, has never been observed when the colon was of the usual conformation, and of which, therefore, the abnormal conformation of the colon must be considered as most probably the cause. Of this disease, the first example which I had an opportunity of witnessing occurred in the spring of 1819, and was treated by Dr. Andrew Duncan, jun., in the clinical wards of the Edinburgh Infirmary. The next case occurred about two years afterwards, in the Glasgow Infirmary, where I was, at the time, house-surgeon. This case, in the absence of the attending physician, was chiefly treated by Dr. Lawrie, then one of the physician's clerks. The third, and only other case which I have seen, came under my own care in the year 1825.

In all of these cases I believe the disease to have been essentially the same; the leading symptoms and appearances on dissection, being very little different, although, as will be seen hereafter, there is some room for difference of opinion as to the precise mode in which the disease originated.

In attempting to sketch the history of this affection, I shall chiefly refer to the case last mentioned; as I am more intimately acquainted with it than with the other two, in consequence of my having attended the patient during the whole course of his complaint, and examined his body after death.

James Connell, apparently from forty to fifty years of age, residing in Stockwell Street, came under my care towards the end of June 1825. He had been long subject to constipation of the bowels, but never to such a degree as to injure his health, which had been tolerably good. For some time previous to my seeing him, his bowels had been more confined than usual, and he had been troubled with flatulency and swell-

* Morgagni, *Advers.* iii. *Animad.* 14.

ing of the belly. On examining the belly, I found it to be very much distended, and the swelling had all the characters of tympanites, being soft, elastic, and resounding on percussion. His pulse was not affected, and he complained only of the uneasy sensation occasioned by the flatulent distension of the belly. He was ordered a dose of calomel and jalap, which produced no effect. Castor oil, Epsom salts, senna, aloes, colocynth, scammony, and elaterium, were all tried successively, or in combination, but all to no purpose; not a particle of *fæces*, nor any flatus, was discharged. Injections, both simple and medicated, were alike unavailing. Among the latter employed were a strong solution of sulphate of magnesia, in an effusion of senna, and a solution containing six grains of tartar emetic. Not the least difficulty was experienced in throwing up the injections, but they came away, either immediately or soon after, without any admixture of *fæces*. On examining the rectum, it was found quite empty, as far up as the finger could reach, and very large in diameter. The patient's friends, of their own accord, introduced a common candle into the fundament, and pushed it as high up as they could get it to go; but not the least relief was procured from it. Meanwhile, the swelling of the belly went on increasing, till it was truly terrible to behold, being carried seemingly to the utmost possible point which the animal tissues could endure, without actually giving way. In this miserable condition the patient lay on his back, with his legs bent, and his knees drawn up, to avoid all stretching of the integuments of the abdomen. The only other posture he could endure was resting on his knees and elbows. When questioned, he complained only of the violent stretching of his belly, the pain of which seemed to swallow up all other feelings. His mental faculties continued unimpaired to the last. The respiration was slow, and as if impeded, most probably from the elevation and immobility of the diaphragm. His pulse was slow, and with a full steady beat. These characters of the pulse continued the last time I visited him, the day before his death, which took place about eight days from the time I first saw him, and about twelve from the last evacuation of his bowels.

The body was examined the day after the patient's death. On opening the cavity of the abdomen, the colon, enormously distended, and occupying an unusual situation, was the first, and indeed the only object which presented itself, all the other viscera being concealed behind its convolutions. Four immense bags were seen running nearly parallel to each other, and in the direction of the length of the body; while another similar one ran, at right angles to them, at the upper ends. So extraordinary was this appearance, that, notwithstanding my having seen two similar cases previously, it was only after tracing the colon from end to end that I became satisfied that I had, as yet, seen no other part of the intestines. The colon observed its usual course, till it reached the left iliac region, when it made a sweep to the right, passing behind the pubis, and returning across the lowermost lumbar vertebrae; it then ascended, till it came in contact with the transverse arch, when, turning to the right, it descended to the sacrum; thus forming the two middle bags above described. Every part of the intestine was greatly enlarged in diameter, but the enlargement was greatest at its lower end, where it was not less than from five to six inches in diameter. The upper part of the colon contained chiefly wind, the lower part only *fæces* of a yellowish white colour, and of the consistence of very soft mortar. On lifting up the folds of the colon, the small bowels were found inflated to the uttermost: the stomach was empty, and of its usual size. There was no effusion of fluid in the cavity of the abdomen, and the peritoneal covering of the bowels exhibited no traces of inflammation, although there was a good deal of engorgement in the veins of the mesentery. The prostate gland was much enlarged, and the dilated neck of the bladder contained upwards of twenty small angular calculi, consisting of uric acid.

It will naturally be asked, whether the examination of the body did not afford any explanation of the obstruction of the bowels? This subject I have deferred to the last, both on account of its importance, and because the obstruction in this case was ascertained to proceed from a cause quite different from that which has been assigned for it in all the other cases of this disease upon record.

In all these cases it was supposed that the obstruction proceeded from a twist of the colon, at the lower end of its sigmoid flexure. In the present case there was no twist, but there was a cause of obstruction more powerful than if the intestine had been (which I believe to be impossible) twisted completely round. To understand the nature of this obstruction, it is necessary to call to mind the description of the colon given above. After leaving the left iliac region, the colon crossed the mesial line of the body, behind the pubis: immediately returning, it ascended on the left side as high as the transverse arch, and then it descended on the right side, keeping in front of the inflated small intestines, till it turned back over the promontory of the sacrum, to be bound down to the anterior surface of that bone by the peritoneum. Now, just at the point where it turned backward, and was most pressed upon by the inflated small bowels from behind, it was crossed in front by the beginning of the ascending portion of its own sigmoid flexure. This last part of the intestine was very heavy; the whole lower part of the colon being, as stated above, filled with feces, and containing nothing else. The infarction commenced somewhat below the middle of the descending colon, and extended to within three or four inches from the end of the sigmoid flexure farther down than which the gut was completely empty. Now, what was it that arrested the descent of the feces at this point? It obviously was the compression of the lower end of the colon, between one of its own massy convolutions passing it in front, and the distended small intestines and inferior end of the vertebral column lying behind it. The compression was exactly of the same kind as though the gut had been pressed in a vice, or between two fingers placed parallel to each other, one before it, and the other behind. At the compressed part the two sides of the intestine were in contact; immediately below, it was quite empty; immediately above, it was more than five inches in diameter, and gorged with feces; and, on lifting up the anterior compressing portion, it left the mark of a quarter of a circle impressed upon the soft feculent mass in the portion behind. This quadrant was exactly the measure of the distance between the completely distended and the

collapsed part of the intestine. It was this remarkable impression upon the end of the colon that first attracted my attention, and, by leading me to examine how it was produced, discovered clearly the cause of the obstruction.

In the case which occurred while I was a student in the clinical wards of the Edinburgh Infirmary, in May 1819, the patient was a female, forty years of age. She had been long previously of a costive habit of body. During nine days preceding her admission to the hospital, nothing had been passed through her bowels, and the obstruction continued complete till her death, five days afterwards, notwithstanding the administration of the most powerful cathartics and injections. As in the case last detailed, no difficulty was experienced in throwing up the injections, and, on examining the rectum with the finger, it was found quite empty and unobstructed. The abdomen was distended to the uttermost, and the seat of a constant and most distressing pain: the swelling was of the tympanitic kind. The sufferings of the patient were much increased by whatever posture put the parietes of the abdomen upon the stretch, and some relief was obtained by relaxing them.

The appearances after death were very similar to those described above. The colon was enormously dilated, and so disposed as to conceal all the other abdominal viscera behind its convolutions. It exhibited two deviations from its normal course. As in the last case, after reaching the iliac region, it ascended as high as the transverse arch, and, turning to the right, descended nearly in the middle of the belly to form the rectum: this was the portion of the intestine most dilated. The other deviation consisted in an incurvation downward of the right half of the transverse arch. What added much to these remarkable appearances was, that the colon was in many places of a green colour, like the surface of stagnant water, owing, as was conjectured, to the contents of the intestine being visible through its attenuated coats. About a pound of sanguinolent serum was found in the peritoneal cavity, and there were marks of inflammation both on the large and small bowels. At the termination of the colon in the rectum, the intestine was observed by Dr. Duncan to be twisted from left to right, and this he

FIG. 1.—Common.

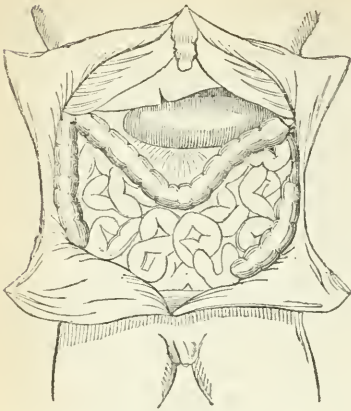


FIG. 4.—Sylvius.

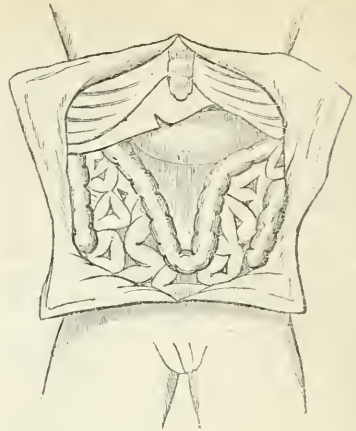


FIG. 2.—Morgagni.

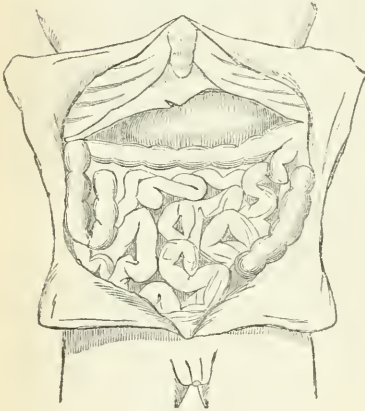


FIG. 5.—Tidicæus.

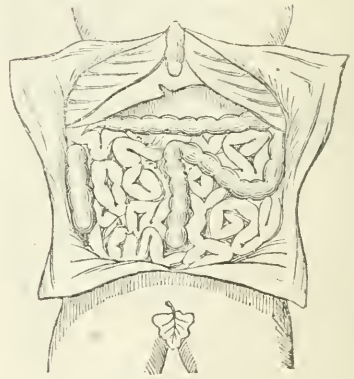


FIG. 3.—Morgagni.

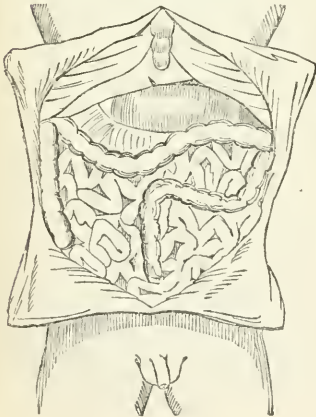
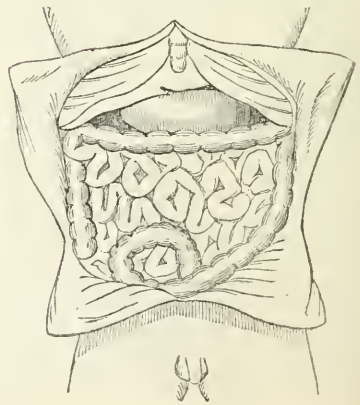


FIG. 6.—Glisson.



supposed to be the cause of the obstruction of the bowels.

Of this case an account has been published, with permission of Dr. Duncan, in the 16th volume of the *Edinburgh Medical and Surgical Journal*, p. 384. To that account I am indebted for some of the particulars stated above.

The last case of this disease, of which, as above mentioned, I can speak from my own observation, occurred in the Glasgow Royal Infirmary in the year 1820 or 1821. I am unable to give the date with precision, having myself preserved no notes of the case; and, although Dr. Lawrie was kind enough to cause a diligent search to be made for the hospital journal, in which the history of it is recorded, his efforts was unsuccessful. The patient was a man of the name of Graham. His bowels had been in a state of obstinate constipation for some time before his admission into the hospital; the most powerful purgatives produced no effect in moving them: injections, and every other means which Dr. Lawrie could devise, were alike unavailing. Of these means, one deserves more particular mention, from its being singularly well adapted to the treatment of cases of this kind, and because it was many years afterwards brought forward as a new discovery in practical medicine. An œsophagus tube was introduced into the rectum as far up as it could be passed, and along this tube injections were thrown into the bowels, but no discharge of feces followed. The patient died after being in the hospital about eight days, and having suffered terribly from the pain in his belly, which was tympanitic, and distended to the utmost degree.

The dissection was performed by Dr. Laurie and myself, assisted by our common friend, Mr. Robert Smith, then apothecary to the infirmary. We found the colon much dilated along its whole extent, and more especially towards its lower end. The sigmoid flexure exhibited the same abnormal formation as in the two preceding cases, being much longer than usual, and lying chiefly in the umbilical region of the belly, in front of the small bowels, having its ascending portion on the left side, and its descending portion on the right. The only cause of the obstruction of the bowels which we could discover was a twist or rather fold of the intestine to one side, where the colon terminates in the rectum. I did not feel satisfied of

the adequacy of this cause to produce the effect ascribed to it, but I could discover none other. The small bowels were much inflated; there were no traces of peritoneal inflammation.

[The conclusion of this paper, with the other six figures, will be given in our next.]

CASE OF GLANDERS OR FARCY.

To the Editor of the Medical Gazette.

SIR,

SHOULD you deem the following case worthy of a place in your valuable journal, I shall feel obliged by your giving it insertion. Whether it is to be considered as farcy or glanders, or farcy glanders, I will not take it upon myself to determine.

John Smith, æt. 30, was admitted into Pitcairn's Ward, St. Bartholomew's Hospital, January 23rd, with an indolent ulceration in the lower part of the left fore-arm, communicating with a fistulous passage, extending upwards between the muscles to a little above the elbow-joint. From this sinus there was discharged a quantity of unhealthy-looking pus, the man being evidently in a bad state of health.

States that he is a knacker by trade; that, about six months previous to his admission, he ran a splinter into his finger, of which, at the time, he took but little heed, but continued his usual avocations. On the day after the receipt of the injury the finger began to be very painful and inflamed, the pain extending up the fore-arm and arm as high as the shoulder. In a few days matter formed in the finger, and the flexor-tendons sloughed. Soon after, another collection of matter occurred in the palm of the hand; and, subsequently to this, two other formations, one in the lower part of the fore-arm, and the other at the lower and inner part of the arm, just above the elbow joint. Was in the habit of taking large quantities of gin; in fact, a comrade of his, who was at the same time in the hospital, stated, that he never knew one of his age drink to such an extent. After the lapse of a few weeks, his friends noticed that he began to lose flesh, and decline in health; but he still continued his employment for nearly two months after the receipt of the injury. He became an out-door patient at the North London Hospital; had formations of

matter in the finger, which were opened, but re-formed. Whenever the parts began to heal, says he became much worse in health, and that the pains in the arm increased. On one occasion the abscess in the finger healed, but a fresh formation of matter took place in the lower part of the fore-arm. About four months ago was admitted into St. Bartholomew's. The abscess in the finger and hand healed, but that in the fore-arm and above the elbow still remained open. He was nearly two months in the institution; when being in a bad state of health, and the abscess showing no disposition to heal, it was thought advisable to make him an out-door patient; which he continued to be for a short time, and was re-admitted on the 23rd of January.

Poultices and warm fomentations were applied to the arm, and the compound senna draught administered *pro re nata*. This treatment was pursued for a few days; but the sinus showing no disposition to heal, it was laid open; at the same time a more generous diet was allowed, and two grains of the sulphate of quinine three times a-day,—sulphate of zinc lotion and water dressings to the wound. Under this treatment the parts assumed a more favourable aspect, the sinus contracted, and the discharge considerably lessened.

On the 19th of February,—that is, a few days after the wound began to heal,—the man complained of pain in the arm and shoulder, which, by the 20th, had extended up the side of the neck. In the course of the day he had a rigor, which lasted for a quarter of an hour or twenty minutes, and subsequently two other distinct attacks. On the following day complained of pain at the left angle of the lower jaw, in which situation the parts were swollen and indurated: leeches were applied and warm fomentations, besides internal remedies. On the following day complained of pain in opening his mouth: the swelling had extended over the angle of the jaw, and up the side of the face, taking the direction of the parotid gland. It (the swelling) was of a bright red shining appearance, indurated, and very painful on pressure; the leeches and fomentations were repeated, which, however, seemed to be of little or no benefit. The inflammation continued to extend, the palpebræ became involved and swollen, so as completely to close the left eye, from

which a thick puriform discharge took place. The swelling and induration gradually extended forwards to the side of the nose. The integuments covering the swelling assumed a livid appearance, and ulcerated at various points, which gave vent to small collections of matter presenting very much the character of carbuncle. The lips became very much swollen, and tubercular elevations formed on them, which rapidly passed into a state of ulceration. The mucous membrane lining the left cheek ulcerated, and portions of it sloughed; the disease extending backward to the posterior fauces. The patient was ordered strong beef-tea in addition to his other diet, port-wine, and the sulphate of quinine; a large linseed-meal poultice over the face, and the gargarisma sodæ chlorinatæ. Nothing, however, seemed to arrest the progress of the disease. He gradually passed into a low typhoid state; the breath became remarkably fetid, and was stated, by Mr. Charles Clark, an experienced veterinary surgeon, who saw the man two days before death, to resemble very much that of a glandered horse. Mr. Clark, also, immediately recognised the characters of the suppurative ulcers around the face and lips as similar to the peculiar appearance of farcy buds in horses. The tongue, the entire cavity of the mouth, and the teeth, were covered with a dark brown or black sordes; great difficulty of breathing came on, apparently from some obstruction at the orifice of the respiratory tube; the patient grew delirious, and expired on the following evening, being the 15th of the present month.

The patient, from the commencement of the affection to its fatal termination, had no discharge from the nostrils; did not complain, though repeatedly questioned on these points, of any pain in the joints or in the head, nor was there any affection of the absorbent glands, nor visible collections of matter in any of the external parts of the body remote from the disease—as in the groins, axillæ, &c.

The poor fellow seemed conscious that the arm was the source of the mischief, and, during the course of the affection, complained of pains shooting up and down the member; stated that he was in the habit of feeding glandered horses, and examining them after death, which he continued to do for some time (about two months) after the

receipt of the wound in the finger; expressed his firm conviction that he was labouring under that malady, which, he said, "would do for him at last."

Post-mortem Examination.—The left parotid and submaxillary glands were found indurated and adherent to the lower jaw; their substance was thickly studded with numerous small collections of pus, varying in size from a pin's head to a split pea, and around these collections the substance of the gland was highly vascular, and presented a bright-red appearance: of the two glands, the parotid was the most affected. The *alae nasi* were livid, and had almost passed into a gangrenous state. Numerous tubercular elevations, which could hardly be said to have passed into a state of ulceration, were seen on the mucous membrane of the nares. The mucous membrane lining the larynx and trachea was much injected, and an ulcer was seen on it, just below the *rima glottidis*. Several small tubercles were seen at the apices of both lungs, which Mr. C. Clark stated were precisely similar to those occurring in the lungs of horses who had died of farcy, or glanders: certainly they were different from the ordinary tubercles found in phthisical subjects. The spleen was enlarged to three or four times its natural size, probably the effects of former disease, but in its substance there were found several small collections of pus. There was also a puriform deposit within, and in the course of, the splenic vein, especially where it emerged from the substance of the organ. The mucous membrane of the stomach did not present any unnatural appearance. There was no collection of matter in the hip-joint, nor had we reason to believe that any of the other joints were effected.

The disease appeared to commence in the situation of the parotid gland, and from thence to extend to the mucous membrane of the nares and fauces.

The chief peculiarity in the foregoing case seems to be the length of time which elapsed from the receipt of the injury to the first appearance of the symptoms indicative of this fatal malady.—I am, sir,

Your obedient servant,

J. R. BRUSH,

Dresser, St. Bartholomew's Hospital.

March 29, 1840.

P.S.—Since writing the above, I have ascertained the following particulars from the wife of the man:—About

the middle of August, received the injury. Went, a week afterwards, to the North London Hospital, and had the abscess in the finger opened, and the nail removed. Continued his work for seven weeks, still making use of the injured hand, and then was admitted into St. Bartholomew's Hospital, on the 13th of October, 1839. Remained nine weeks in this institution; was then made an out-patient, which he continued to be till his re-admission, which took place on the 23d of January. From the time of his first admission into the hospital (13th of October) to the first appearance of the malady (19th of February), including a period of nearly four months, had entirely left off work; and during the time he remained an out-patient, had not been exposed to fresh contagion.

The foregoing statement, as to the time the man was entirely out of employment, was severally corroborated by his former master and the club of which he was a member, and that in consequence he was placed on their pension-list, from which he continued to receive an allowance up to the period of his death.

The nurse who attended upon John Smith, on the third or fourth day after his decease perceived a small painful tumor near the axilla. On the two following days was subject to irregular chills alternating with heat of skin, and passed restless and sleepless nights. On the Saturday evening (March 21st), the arm was very painful, and an inflammatory blush appeared. On the Sunday morning, when she first directed our attention to it, nearly the whole arm, from the axilla down to the elbow, at its inner, anterior, and posterior aspects, had become involved in an extensive phlegmonous inflammation, bearing a close resemblance to that occurring in the face of the man already detailed, but much more rapid in its progress, considerable nervous irritation being present.

There appears a strong probability that this affection is connected with that under which John Smith laboured. I am not aware, however, of any instance in which farcy or glanders (which appear to be of essentially the same nature) have been propagated from one human subject to another; and that whether, in case of absorption of the virus, the specific disease be communicated, or common phlegmonous inflammation be the result.

ON THE ETHEREAL SOLUTION OF ERGOT.

To the Editor of the Medical Gazette.

SIR,

HAVING made repeated trials of a preparation of ergot given to me by my friend Dr. G. O. Rees, I have been induced to request from him the method of its preparation, in order that I may lay it before your readers.

Although by no means a strenuous advocate for the common employment of the ergot, yet I am prepared to admit its efficacy and value in cases of protracted labour, where the presentation is natural, the pelvis of standard size, where the soft parts are dilated and fully prepared to admit the passage of the child, where uterine effort alone is wanted to complete the labour, and where there are no contraindicating circumstances forbidding its exhibition. In cases of this description, I have used the preparation, and have seen it employed by others, with complete success. I have also tested its efficacy in hæmorrhage occurring after the birth of the placenta, when the uterus has not contracted well, or where its contraction and dilatation alternated. In cases of this description, the exhibition of the ergot has been followed by a permanent contraction of the viscus, thus preventing inordinate discharge. In passive menorrhagia, when there exists no organic lesion, this form of medicine will be found of great value; the discharge is generally lessened after the exhibition of the second dose; and in no case in which I have given it, has it failed ultimately to put an end to the bleeding.

All the other preparations of ergot with which I am acquainted not unfrequently produce nausea, sickness, headache, falling of the pulse, dilatation of the pupil, &c.; but in no one instance have I seen these symptoms produced by the ethereal solution: they most probably are caused by some constituent in the drug which ether does not dissolve. I have given the solution to puerperal women in doses varying from ℥xv. to ℥xxx. dropped upon a lump of sugar, and have found that uterine action has commenced in twenty minutes or half an hour. In cases of menorrhagia, I have given ℥v. to ℥viij. three times a day, and have not had reason to persevere in its employment more than four or five days.

The advantages of this form of the drug may, I think, be stated as, first, the convenience of its exhibition; secondly, the certainty of its operation; and, thirdly, its non-production of those unpleasant and sometimes dangerous symptoms so frequently caused by the other preparations of the ergot. With regard to the method of its preparation, Dr. Rees writes to me as follows:—

“The ethereal solution, the properties of which you have so well tested, was prepared by digesting ℥iv. of the powdered ergot in f℥iv. of ether during seven days. The result was a solution of the fatty matters contained in the drug: this was poured off, evaporated to dryness, and the residue again dissolved in f℥ij. of ether. I have since tried to re-dissolve in alcohol, but the fatty matter appears to contain myricin, which resists that menstruum even at a boiling heat. The solution should be kept in a well-closed glass-stoppered bottle, to prevent evaporation. Each ounce of the preparation may be considered as equivalent to two ounces of the ergot, or ℥xv. to a half-drachm dose of the powdered drug. Should there be any objection to the administration of the ether, the practitioner has only to drop the required dose upon a piece of lump sugar, and expose it to a current of air for a few minutes, when the fluid will completely evaporate. I regret that I have not had leisure to procure the different fatty matters of the ergot in a separate form, and so subject each to trial as a medicinal agent. If this were done, there is little doubt but that a still more convenient form for exhibition might be obtained, and the peculiar action of the drug traced to its true source. It appears highly probable that the fatty matter contained in the ergot is peculiar in character: from one specimen which I examined, I obtained a fat which, when treated with strong sulphuric acid, became a fine green colour—a re-action which I am not aware has ever yet been noticed as occurring with any fatty substance either from the vegetable or animal kingdom.”

I am, sir,

Your obedient servant,

JOHN C. W. LEVER.

33, Bridge House Place, Southwark.

CONGENITAL STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

I TAKE the liberty of forwarding to you for publication, a portion of a communication which I have recently received from Professor Dieffenbach, of Berlin, in the hope that it may prove interesting to my professional brethren; whilst it secures, I believe, to Prof. Dieffenbach the distinction of having been the first to put in practice the operation here detailed.

It consists in the division of the musculus rectus oculi internus for the convergent variety of strabismus, the manner of performing which I shall relate as nearly as possible in Professor Dieffenbach's own words.

On the cure of congenital strabismus, by dividing the M. rectus internus oculi.

A case of division of the internal rectus for strabismus convergens, operated upon by me, was followed by a successful result. Professor Jüngken, who examined the patient, was much gratified by the success of my operation. The subject of it was a boy, seven years of age; one eye was forcibly drawn to the internal canthus, and considerable deformity was the consequence. I performed the operation in the following manner: the boy's head was supported against the breast of one assistant; a second elevated the upper eye-lid by means of a hook, whilst the lower was depressed in a similar manner, thus exposing to view a considerable segment of the bulbus oculi. With a third hook I pierced the conjunctiva in the canthus internus, and the cellular texture for a sufficient depth beneath it, and gave this to the care of a third assistant. I then, by means of an extremely fine hook, pierced the sclerotica at the internal canthus (holding the instrument in my left hand) and drew the barb outwards. Having done this I proceeded to incise the conjunctiva in this part (the internal canthus) by the side of the globe, separated it still deeper from this latter, and then divided the internal rectus, thus exposed, with a pair of fine scissors near to its insertion: with the rapidity of an electric shock, the globe darted suddenly outwards under the influence of the external rectus; it as suddenly righted itself, and at this time the axis of the eye assumed a perfectly normal

direction. The hæmorrhage during the operation was inconsiderable, but nevertheless sufficient to occasion some embarrassment in its performance. Cold lotions were afterwards applied, inflammation of the globe did not appear, and within eight days the cure was completed. I must record my acknowledgments to Dr. Böhm, for the care which he bestowed upon the patient after the operation.

Stromeyer, in his fine treatise upon "orthopædia subentanea,"* asserts the practicability of dividing the internal rectus for strabismus from the result of his researches on the dead subject, but until the present case no instance of its performance upon the living has occurred. I hope that a place in ophthalmic surgery will be awarded to it for the future.

DIEFFENBACH.

Professor Dieffenbach has repeated this operation in two more cases: both were boys, one of 11 and the other 15 years of age. In both these also a perfectly successful result was obtained. In his report of the case, it will be perceived that the side on which the operation was performed is not specified; it is most probably the right, from the fact of his holding the hook which grasped the sclerotica with his left hand. This, however, is of minor importance.

The same communication contains a recent paper by Professor Dieffenbach, upon the division of contracted muscles causing deformities of the extremities; which has been published in "Die Wochenschrift für die gesammte Heilkunde."

I should have been anxious to request a place in your esteemed journal for some of the very valuable facts comprised in this paper, but I am saved from further intrusion upon your pages, by the very comprehensive abridgment of it which has already been presented to the English medical public in one of the quarterly reviews.—I am, sir,

Your obedient servant,

JOHN LOMAS.

60, Grosvenor Street, Manchester,
March 14th, 1840.

P.S. Dr. Dieffenbach's letter is dated Jan. 18, 1840, but the date on which he performed the first of the above operations is not given.

* Beiträge zur operativen Orthopädie, oder Erfahrungen über die subcutane Durchschneidung verkürzter Muskeln und deren Schmen. Von Dr. Stromeyer, Hanover, 1838.

RECORDS OF VACCINATION.

To the Editor of the Medical Gazette.

SIR,

If you have room in your next number, and will insert the inclosed, you will oblige, sir,

Your humble servant,
E. LEESE.

Baker Street, April 1st, 1840.

This appears to be an age for disbelief and doubting, and by some remarks in a late number of the 'London Medical Gazette,' Mr. Estlin, of Bristol, has doubts as to the data upon which the late report of the "National Vaccine Establishment" to government, with regard to the pedigree and unbroken line of vaccine virus from the days of Dr. Jenner, is founded. He doubts also some statements made by me in another publication: the reply I make, so far as I am concerned, is, come and see, or depute a friend to do so. I will then lay before him a list of the numerous practitioners whom I have supplied with virus, and figures denoting the child from whom it was taken in each instance. He may then peer through fourteen folio volumes, and see the names and residences of every one of the individuals who have been vaccinated at the station entrusted to my management: so plain, yet comprehensive, is the detail rendered by the help of a few figures, in the ruled and printed books furnished to me for registration, he may readily trace the catenation, retrospectively, from the end of the last to number one in the first, and convince himself how groundless are his doubtings and surmises. I agree with him, that these registers, with the various remarks they contain, through the lapse of forty years, are of very high importance to the practice of vaccination. If the register kept by me do not remove his doubts, let him proceed to the other government stations: I know that my worthy and respected friend, Mr. Gilham, has an unsevered chain of pedigree, including upwards of 89,600 names, without a link broken.

MEDICAL GAZETTE.

Friday, April 10, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."
CICERO.

PHYSICAL CONDITION OF THE WORKING CLASSES.

MR. CARLYLE remarks, in his instructive essay on Chartism, that among the various topics which occupy the representatives of the nation, the "condition-of-England question" is omitted. We are not to understand, indeed, that the reform of chapters and corporations, or discussions on "what the Swede intends, and what the French," are wholly alien to the subject, but that they do not go to the root of the matter. Hence we were glad to see, that, at the beginning of the session, a philanthropist moved for a committee to inquire into the most essential part of the subject; and it affords us additional pleasure to find that he has embodied his views in the tangible shape of a pamphlet.*

One is inclined to regret, indeed, that among the six hundred and fifty-eight members of the House of Commons, there is not room for half-a-dozen sensible physicians, who might act as interpreters between rich and poor, and inform their fellow deputies of the real state of the working classes. In two nights they would set forth evils and their remedies with more force of persuasion than a select committee could attain to in three months. But, for the present, destiny has ordered it otherwise; and, as we cannot have Dr. Alison in the House, we must be content with the benevolent speech of Mr. Slaney.

After a short sketch of the deep-rooted

* State of the Poorer Classes in Great Towns: Substance of a Speech in the House of Commons, Feb. 4, 1840, on moving for a Committee to consider the causes of discontent. By Robert A. Slaney, Esq. M.P. With Notes and References. London, 1840.

uneasiness of the lower classes, as shown in the Luddite riots of 1812, the Manchester meeting of 1819, and the rising of Brandreth and his associates in 1821, Mr. Slaney comes to the grand topic of the day among thinking persons—*chartism*, and all that this weighty word implies. It may be asked, he says, “to what causes do you attribute the growth and increase of discontent among these industrious classes?” To this Mr. Slaney answers, “that we are able to show very great changes in the social condition and in the numbers of the working classes, in populous districts, within the last century.”

These changes have been overlooked or neglected by successive administrations, so that when the rich and luxurious at last awaken from their sybaritic dreams, they are affrighted at the angry discontent around them, and call for bayonets and penal laws, instead of moral training and physical comforts for the poor. One of these changes is the alteration in the ratio of the manufacturing to the agricultural population. “In 1790, the number of manufacturers and workmen living in towns was, to the labourers in the country districts, as one to two. In 1840, the proportions have become exactly reversed, and the numbers of the former are to the latter class as two to one. In forty years from 1800, agricultural labourers have increased from 40 to 45 per cent.; whilst workmen in towns and manufacturing districts have augmented 120 per cent., and in *great towns* much more.” (Slaney, p. 11.)

In the period between 1800 and 1831, Leeds increased 99 per cent. in population; Liverpool, 100; Glasgow, 108; and Manchester, 109. In the West Riding of Yorkshire, the proportion of manufacturers, miners, and town workmen, to labourers in husbandry, is 3 to 1; in Lancashire, 10 to 1; and in Middlesex, 12 to 1.

One of the inevitable results of a town population is the crowded state of its inhabitants; and among the manufacturing classes, the employment of women and children in factories and workshops is unfavourable to physical and moral health, and tears up the charities of life from the roots. Another consequence is, that the poorer classes learn to analyze their own state, and the remedies which might be applied to it; and men who, in the language of Sir William Jones, “know their rights, and knowing dare maintain,” are often uncomfortable neighbours during that embryo state in which their rights have not yet assumed the shape of law.

In order to disturb the frame of society, it is not requisite that the condition of these men should be worse than that of their forefathers, but simply that it should be worse than what they clearly see to be attainable under a happier state of things. Thus, in the great outbreak of France in 1789, the state of the nation was not worse than it had been previously; not worse than that of many other European states; but most wretched, when compared with the wants and capabilities of a nation through which knowledge had been long and widely diffused. This the lords of hill and valley could not, and would not see; so they were swept away like noxious exhalations before a hurricane, purifying and destroying in its career! Now, the six members whom we wish to see in the House, would illustrate this simple matter better than the choicest of select committees; those whose daily occupation had brought them into familiar intercourse with the artisans of London and Birmingham, might explain to gentlemen of 8000*l.* a-year that we are no longer in the sixteenth century, and cannot be governed by its rules. Mr. Carlyle justly observes, that the rights of man vary with the time, and that the Highland woman, who, amid her tears,

said to her husband, at the foot of the gallows, "Go up, Donald, the Laird bids ye," thought much of the rights of lairds, and little of those of men. But what if it should turn out, on examination, that, in spite of the progressive wealth of England, large classes are untouched by the golden shower, and may be retroceding in the general advancement? In a great city, we have not merely the startling contrast between the employer and the workman :

"Here, while the courtier glitters in brocade,
There the pale artist plies the sickly trade;"

but, even among those who minister to the wants of society, the difference in condition is surprising. We must not trust to those statistics which shew the increase of consumption in articles of luxury, but we must look into the actual condition of the less favoured classes, and not be content with judging in the lump. "The richer and middle classes have much increased their comforts and conveniences, and we may hope and believe that the situation of a portion of the working classes (whom we will call the *skilled* labourers) has improved also. With respect, however, to a very large proportion, we shall, we fear, on inquiry, find that their condition not only has not improved, as it should have done, in proportion to that of the richer classes, but that in many respects it is much worse than it was before."—(Slaney, p. 14.)

One of the first points which will shock the philanthropist who enters upon this subject with the attention which it deserves, is the state of the dwelling-places of the working classes. Thus, Nottingham contains about 11,000 houses; and of these, from seven to eight thousand are built back to back. When the town was first visited by cholera, many rows of houses were found to be placed upon drains, which were covered only by the boards of the sitting-room floors.

In Liverpool, there are 7862 *inhabited cellars*, containing 39,300 persons; being full a fifth of the working classes. At Manchester, when a board of health was established, in expectation of the cholera, of 687 streets inspected, it was found that 248 were unpaved, and 53 but partially paved; that there were 352 which contained heaps of refuse, stagnant pools, &c.; and that of 6951 houses inspected, 2221 had no privies. In the same town, nearly 12 per cent. of the working population live in cellars. In Bury, with a population of 20,000, it was found that

In 773 houses, they slept 3 to 4 in a bed.

In 207 " " 4 to 5 "

In 78 " " 5 to 6 "

These last data are taken by Mr. Slaney from the Report of the Manchester Statistical Society on the State of the Working Classes, and are enough to rouse the most apathetic. Facts, always generically the same, though sometimes differing in species, are stated of Newcastle, Leeds, Glasgow, and London.

"In some parts of Bethnal Green and Spitalfields," says Mr. Hickson, "inhabited by weavers, every house ought long ago to have been condemned and razed to the ground. Ruinous buildings, streets without sewers, overflowing privies and cesspools, and open ditches filled with a black putrifying mass of corruption, infecting the air for miles around, render the district the abode of disease and death."

The obvious remedy, as recommended by Mr. Hickson, and approved by Mr. Slaney, is a good Building Act, applicable to every town in the United Kingdom. The good old maxim, *sic tuo utere, ut alienum non lædas*, is here especially apposite. It is enforced in London, with respect to party-walls and parapet roofs; but is equally applicable to drainage, paving, and the width of streets. To allow a landlord to build any houses that he may find marketable

among the poor and ignorant, is, in effect, to allow him to set man-traps.

The establishment of public walks in the vicinity of densely peopled towns is so obvious and necessary an improvement, that it requires but to be mentioned, without comment. It is remarkable that Mr. Slaney says that he shall not be deterred by the fear of ridicule from again urging its necessity. To cast ridicule on a project combining the clearest utility and the finest taste, seems strange, indeed; but, as Goldsmith tells of an author who could draw up an answer to any book at twenty-four hours' warning, so there are some persons who would write you an epigram against a clean shirt or a tooth-brush. Or, perhaps, the true reason is, that certain beings have an innate aversion to any improvement, lest, if beneficial changes went too far, *they*, too, should be swept away.

Another great point is to enable the working classes to ensure themselves against the fluctuation of employment and wages by benefit societies. The ordinary clubs under this name are confined to cases of illness or death; and something is wanted to afford a stipend when men are out of work, and thus make the years of plenty provide for the time of famine. The 4 & 5 Will. iv. c. 40, gives legal facilities for this purpose; but its provisions are not yet much known or acted upon. Mr. Slaney benevolently proposes that some bonus, or other inducement to the formation of such societies, should be held out by government or private persons.

Among the other subjects touched upon by Mr. Slaney in his good-humoured speech, are the increase in the committals of criminals and the consumption of spirits, and the necessity of providing for the growing wants of the people by an augmentation in the number of churches and schools.

A select committee was appointed,

not with the wide range of inquiry originally proposed by Mr. Slaney, but "to consider circumstances affecting the health of the inhabitants of large towns and populous districts, with a view to improved sanatory regulations for their benefit."

We wish every possible success to its labours.

CLINICAL LECTURES,

Delivered at St. Vincent's Hospital,

By J. M. FERRALL, Esq., M.R.I.A.,

First Medical Adviser to the Hospital.

Periostitis—comparative value of the different modes of treatment—That by incision—case—constitutional disturbance—cure in 28 days. Treatment by Mercury—case—cure in 37 days. Treatment by Hydriodate of Potass—cure in 13 days. Comparison of the rapidity and safety of the three plans—cases with and without suppuration—the Hydriodate available in both—utility of Sarsaparilla.

GENTLEMEN,—We have just now had three cases of periostitis under observation at the same time, and I availed myself of the opportunity of testing, for your instruction, the comparative merits of the several modes of treatment recommended for the cure of this disease. These are, the treatment by *free incision*—by *mercury*—and by *hydriodate of Potass*. Certain circumstances in the origin and stage of this disease will often influence our decision as to the particular course to be pursued, but the cases under your notice were tolerably well calculated to display the effects of remedies, and their results, being as nearly as possible analogous forms of the complaint. The form of periostitis to which I allude, may be termed *circumscribed*, in contradistinction to the *diffuse*, which engages a larger extent of the membrane, and ends speedily in necrosis of the subjacent bone. I mentioned to you in a former lecture, my objection to the terms *acute* and *chronic* in affections of the osseous system and its coverings; length of time is no measure of chronicity in inflammation of these structures. A marked practical difference will be observed, when you study the periostitis which invades the whole or greater portion of the coverings of a long bone, and compare it with that which occupies a more limited space, however severe the sufferings of the individual in the latter case.

The pupils of this hospital have witnessed the several plans of treatment to

which I refer, adopted in individual cases from time to time, but more frequently that by the hydriodate of potass, on which I have the greatest reliance. But as pupils do not always continue to observe the same practice for a lengthened period, the present occasion is favourable for enabling you to form an opinion, and decide upon that which you will in future employ.

REPORTED BY MR. WILKINSON.

Periostitis treated by incision—cure in 28 days.

Mary Magrane, aged 40, was admitted into Joseph's ward, on the 2d December, labouring under the following symptoms: excruciating pain in both tibiæ about their middle, the pain extending above and below for a considerable distance. It was greatly aggravated by the depending position, and so intense at night that she positively declared she had not slept for three weeks; her appearance shows great exhaustion; her appetite is gone; her tongue pale and slightly coated; pulse 96; bowels irregular; renal secretion scanty, and depositing the lithates.

Dec. 3d.—The state of the limbs is as follows: there is a visible swelling occupying the seat of pain in both tibiæ, and fading gradually off to the distance of an inch and a half at either end from its central prominence; the left is not discoloured; it has a firm feel, with the sensation as if the cutaneous vessels were enlarged and rolled under the finger; there is very slight œdema; the sensibility of the part is very great when pressed: the right exhibits a swelling of the same dimensions; it has a dusky red colour, and in its centre there is distinct fluctuation surrounded by a firm border.

She states that she never had any specific disease, her husband being a remarkably well-conducted person. She has never had rheumatism, nor used mercury in any way, of which she was aware: the complaint began in the right leg about four months ago, by pain, which was only felt at night, but did not prevent sleep; this very gradually increased, and she then perceived the part to be swelled. The left leg became affected about six weeks ago, and the pain was in the beginning nearly as severe as at present; she remarked that from the time the left shin bone was attacked, the pain in the right became suddenly worse, and soon acquired its present red colour. Some aperient medicine is directed, and a broad poultice laid on the parts, which are to be kept in an elevated position.

Dec. 4th.—She passed a wretched night; she thought herself much easier for an hour after the limbs were raised, but the position soon ceased to afford relief. An incision two inches long was made through the fluctuating swelling on the right tibiæ,

and carried down to the bone: about a drachm of pus of a pale brown colour escaped; the bone felt bare to a probe introduced through the opening.

A similar incision was made through the swelling on the left tibia; the periosteum was found adherent as usual to this bone; the hæmorrhage from both was free, but not copious; a bread poultice was laid on each after a short ablution with warm water: the elevated position was resumed.

Dec. 5th.—She states that the smarting of the incision did not last long; the pain is quite relieved as long as the limbs are kept raised, but she cannot bear the depending position; her sleep was refreshing, and lasted several hours. The surfaces of the incised parts exhibit a lymph covering, that of the right discharges a brownish pus of disagreeable odour; appetite better; she has some thirst; pulse 84.

Mist. efferves. 3tiis horis.

Dec. 7th.—She does not feel so well to-day; her thirst continues, and she did not rest well last night, although free from pain in the limbs; pulse 90; skin hot. The urine, which had become more copious and clear, is now again scanty and red, but without sediment. The left limb looks favourably, and healthy pus appears on the poultice: the right exhibits more tumefaction and redness.

Six leeches to be applied in the neighbourhood of the incision; fomentation and poultice: the effervescing mixture to be continued.

R Massæ pilul. Hydrarg. grana tria;
Pulv. Jacobi, grana duo. M. ft. pilula.
hora somni sumenda. Mist. Cathart.
prim. mane.

Dec. 9th.—The feverish condition has nearly subsided; she slept soundly last night, and enjoyed her breakfast this morning; tongue clean; pulse 76; urine natural. The left wound is granulating, and less in size. The right is throwing off a sloughy pellicle, and healthy pus exudes from the subjacent parts; she is ordered nourishing diet.

December 14th.—Both wounds present a healthy granulating appearance; the granulations in the right are closing in over the bone, and the probe no longer reaches it: the appearance of the granulations here is somewhat different from the other, they are rather larger, but their colour is scarcely less florid; healthy pus escapes from both; there is no return of pain.

December 20th.—The left tibia now healing rapidly: the right is filling up, but the granulations still want the appearance of health; she continues to improve in strength, and feels no soreness except when

standing erect: the parts are dressed with soap plaster.

December 26th.—The wound on left tibia is healed. That on the right has assumed a perfectly healthy aspect within the last two days; it is filled up, and begins to cicatrise at the edges.

January 2nd.—The parts are quite healed; she can now walk with ease; the soap plaster and a light roller appearing to give sufficient support to the vessels of the limbs.

You perceive that some slight degree of constitutional disturbance followed the incision in this case; and at that period, (the third day after the operation) we apprehended our patient was about to be visited by erysipelas, for the edges of the wound on the right tibia were tumid and tender, and the integuments around had an inflamed appearance. The employment of a mild mercurial aperient, conjoined with James's powder, and followed by the house mixture, seemed to check this feverish state: the irritation was probably connected with the sloughing of a small portion of the exposed periosteum, which came away a few days afterwards. If any part of the surface of the bone was parted with, it is probable it was dissolved or absorbed, for it was not observed at any subsequent period, in the discharge. You are aware that the question of the mode in which dead bone is disposed of is yet unsettled, and therefore we cannot speak positively on this point. The granulations, you must have remarked, were larger on this leg than the other until the 20th day, when a perfectly healthy action was established, and the healing was soon accomplished; this was completed on the 28th day after the incisions were practised, and then for the first time she could bear to throw the weight of the body on the limbs, although every assistance was afforded by the support of straps of soap plaster and bandage.

The next case exhibits the influence of mercury on this disease.

REPORTED BY DR. DROUGHT DICKSON.

Periostitis treated by Leeching, Blisters, and Mercury—Cure in thirty-seven days.

Bridget Reddy was admitted into Joseph's Ward on the 22d November.

This woman was about 28 years of age, married, of regular habits, and free from any specific disease. There was nothing to account satisfactorily for the occurrence of severe pain in both shin-bones about six weeks before she applied to the hospital. The pain was slight at first, but became more intense afterwards, and, being worse at night, had altogether deprived her of rest.

Both tibiae exhibited the characteristic

swellings of periostitis; circumscribed tumors, slightly pitting on pressure, exquisitely tender to the touch, and marked by a faint dusky redness. That on the left tibia was lower down than the right; the blush was scarcely perceptible, except that when the finger was applied, a spot whiter than the remainder was visible for a moment afterwards.

Six leeches were directed to be applied to each tibia, followed by a poultice; the foot to be raised, a mild cathartic draught, and afterwards the following pills:—

℞ Hydrarg. Submuriat. gr. xij.; Extract. Opii, gr. ij. M. ft. Pilulæ sex, una ter in die sumenda.

24th.—She slept for two hours after the application of the leeches, but the pain returned before morning.

Hirudines duodecem, pilulæ ut antea.

29th.—The pain has been occasionally very severe, but is now much better; the mouth is now sore; bowels frequently moved, with some griping and tenesmus. The pills were ordered to be omitted, and a draught composed of rhubarb, magnesia, and tincture of opium, given.

December 2d.—The pain is much lessened, but the tenderness on pressure remains. The œdema and slight redness are entirely removed; the bulk of the swelling is decreased; the gums are more swollen, and salivation is increasing. A gargle is ordered. The bowels are moved two or three times daily, but without pain.

Hirudines sex tibiis.

6th.—The pain and tenderness on pressure are altogether removed; her sleep is disturbed only by the soreness of her mouth; patches of ulceration are visible on the inside of the cheeks.

A lotion of nitrate of silver to be applied to the inside of the cheeks.

9th.—Having left bed for two hours yesterday, she was disappointed on finding that the depending position of the limbs reproduced the pain in some degree. The swelling has not undergone any further change; it is slightly painful on pressure; the cheeks are quite healed, but salivation continues in a moderate degree.

Ordered to remain in bed, and apply a blister for four hours to each tibia; the part to be dressed with Ung. Hydrarg.

16th.—The blister is healed; there is some diminution of the swelling, especially of its extent: she is quite free from pain as long as she remains in bed, but a few hours in the erect posture produce a feeling of weight and distension. The gums are still tender, and prevent her tak-

ing solid food. Six leeches to be applied as before.

24th.—The last leeching enabled her to use the limb more freely, but she cannot stand for any length of time without feeling a return of the sense of bursting in the parts. Her health is now quite good, and she can take food in sufficient quantity. In order to support the superficial vessels, the swellings are covered with straps of soap plaster, and a light roller is applied from the toes upwards.

30th.—She can now stand and walk without inconvenience: she has been improving since the parts were bandaged, but only now feels her accustomed power of using the limbs.

From this period until she left the hospital (early in January) she was quite free from pain or inconvenience: the swelling was lessened, but a hard unyielding elevation, about an inch and a half in its long-diameter, remained.

This case, gentlemen, as well as that of Magrane, exemplifies the principle which obtains in all inflammations of external parts—namely, the necessity for affording mechanical support to the weakened vessels, when the acute stage has passed away. The utility of the bandage and straps of soap plaster was observed immediately on their application. The patient was then able to support the weight of the body on the limbs, and lost that distressing sensation of bursting which you have so often heard them describe. The effect of local blood-letting was merely temporary, and unlike that which follows this measure in inflammation of other structures; nor is there any reason to suppose that leeching, pushed as a remedy to any extent, is capable of curing the disease when unaided by other means: on the contrary, the cases in which it has been tried have disappointed those who made the experiment.

We succeeded in curing this patient by mercury; but we cannot help admitting that considerable inconvenience, and some degree of risk, attended the process. The medicine was withdrawn the moment the gums became slightly touched; and yet you remarked to what an extent the salivation afterwards proceeded. This is always an untoward event, for the gums are sometimes permanently altered in appearance from this cause; and this, at a period when mercury is less extensively used than in former times, is always a subject of regret, and often of complaint, by the individual. Now, whatever caution is employed in the use of this mineral, and however systematically the course is conducted, this excessive salivation will occasionally occur, for we sometimes see ulceration of the gums and cheeks where the

mildest preparations have been used, and in the smallest doses. The diarrhoea was also a source of annoyance; and, in bad constitutions, mercurial diarrhoea is sometimes very obstinate. It generally yields to the remedy you employ, but is in some instances disposed to return, and then will, perhaps, resist the medicine which succeeded before. The case of Ward, the man who was treated for acute arthritis confined to the knee-joint, was cured by mercury, but suffered for two or three months from constantly recurring diarrhoea. He went out of the hospital quite well, but considerably reduced by the illness. I suspect that in some of those cases of protracted diarrhoea, from the use of mercury, and of the mercurial dysentery (which is, perhaps, the more frequent occurrence of the two), that a state of the mucous surfaces exists, analogous to that which we discover on the inside of the cheeks, and would be as easily controlled if we could apply our remedies to the abrasions.

The almost specific powers of the hydriodate of potass, in periostitis, are exemplified in the next case, which is interesting in more than one point of view.

REPORTED BY MR. W. M'MAHONE.

Periostitis, with Suppuration, treated by Hydriodate of Potass—Cure in thirteen days.

Anthony Hussey, æt. 33, a carpenter, was rendered incapable of working at his trade for five months, by pain and swellings on both tibiae. Although a strong man, he felt quite exhausted by loss of rest, for the pain was most agonizing at night, and entirely deprived him of sleep of more than half an hour's continuance. His sleep was sure to be broken by intense pain in the tibiae, and he could procure partial relief only by walking about the room until he became cool.

In this state of suffering, Hussey was admitted into Patrick's Ward on the 5th December, and the parts, on examination, presented the following appearance:—

A circumscribed swelling existed, about three inches below the head of each tibia: that of the right leg was firm, and nearly unyielding to pressure; it occupied about two inches of the surface of the bone. A dusky blush was observed in the integuments, and a very slight œdematous pitting to the finger. His suffering was greatly increased by the examination. The left tibia was more inflamed in appearance; the swelling was about the same size, but in its centre, where the skin was reddest, a distinct fluctuation, surrounded by a firm border, was observed.

This man attributed his complaint to rheumatism from exposure to rain. He had used mercury, but not for ten or twelve years.

In order to contrast the results with the treatment by incision, the parts were covered simply with a dossil of lint moistened in tepid water, and he was put on the hydriodate of potass, in doses of eight grains three times a day.

The first night was passed, as usual, in torture; the second he thought better.

Dec. 7th.—Hydriod. kali, gr. xij. ter indie.

8th.—No pain last night; slept much better.

9th.—Slept soundly last night, and feels refreshed. The inflammatory blush of the skin is much fainter, and the cedema nearly gone. The fluctuation in the left tibia persists. Ordered hydriod. kali, gr. xvj. ter indie.

15th.—Hussey is in great spirits to-day, and cannot be kept in bed. He is entirely free from pain night and day. The fluctuation in the left tibia is nearly gone, the swelling is diminished, and the colour of the parts is a pale brown. With a view to further reduction of the thickening of the inflamed membrane, the hydriodate was increased to 20 grains three times a day.

18th.—No trace of fluctuation; the swellings are very much lessened, and are now hard and quite sensible to pressure. He begs to be allowed to return home.

You all observed what a remarkable improvement took place in Hussey's appearance when he began to sleep at night. In fact, the poor fellow was worn out by suffering and loss of rest, and would have cheerfully submitted to any operation likely to procure relief. I was willing, however, to give a trial to the hydriodate before resorting to incision, although our hope of succeeding was lessened by the discovery of distinct fluctuation in the left tibia, especially as it was encircled by a firm border, which left no doubt of the nature of the sensation conveyed to the fingers. There was another circumstance in this case which diminished the probability of procuring absorption by internal remedies. This man had been an out-patient two years before on account of an ulcer on the left ulna near the olecranon. The ulna was exposed and rough at this point, and the sore healed only after the exfoliation of a small plate of bone. This complaint he distinctly described, at the time, as originating in a hard painful swelling on the bone, which, after some time "broke," and discharged a "yellow stuff." There could be no doubt that all this was circumscribed periostitis of the ulna ending in suppuration; and I think we may fairly presume that the swelling in the tibia would have followed the same course. I do not wish to convey to you that he might not ultimately have got well of the latter disease, but compare a tedious suppuration with exfoliation from

a bone in the lower extremity, and which would, in all probability, have deprived him of all means of earning for months: compare this with the rapid amendment which occurred under the use of the hydriodate of potass, and which really occupied only thirteen days altogether, for the last seven or eight of which he considered himself well, being quite free from pain.

The local treatment in this case was intentionally simple, in order that we might be able to judge fairly of the powers of this salt. Leeching, which in Reddy's case was combined with the internal use of mercury, was here omitted, and you perceive our patient was relieved in a much shorter time.

In comparing the results of different modes of treatment in this painful disease, you have to consider—1st, by which is the pain most speedily relieved,—2ndly, which restores the power of using the limb soonest to the patient,—and, 3rdly, which plan of treatment is attended by least danger and inconvenience.

Now, if the three cases at present under review were the only instances in which I had made the trial, I could not allow you to form any judgment from them alone. But as the results correspond very closely with those observed by myself in many others, and even in this hospital, by such of you as have been attending its practice for more than the present session, I may safely permit you to regulate your practice by their events.

As regards the immediate relief of pain, there can be no doubt that incision, where it succeeds, has greatly the advantage of the mercurial treatment. The merit of having insisted on this practice in periostitis is due to Sir Philip Crampton, whose excellent practical paper on this subject you will find in the first volume of the Dublin Hospital Reports. I say, *where it succeeds*, for some of the cases in the essay to which I allude are indicative of its uncertainty, except when the surgeon has an opportunity of employing it in the early stage. In one of his cases, in which incision was followed by immediate relief to the part incised, the disease attacked the periosteum immediately below the point of incision, within a week from the first operation. A new incision was now made to relieve the latest point of attack, and relief followed as before; but before this last wound was healed, an attack of pain, which was only relieved by a nightly dose of opium, occurred in the seat of the original incision. In another of his cases, (that reported by the late Professor Todd) but which was of longer duration, the incision was followed by partial relief, and the patient, a lady, left town, suffering severe pain occasionally afterwards in the country.

The hydriodate of potass is generally

capable of controlling the morbid action, and relieving pain in a shorter time than I was prepared to expect. The fifth or sixth dose will, in the majority of instances, enable the patient to sleep; and I have known many instances where the third or fourth dose has produced this effect. I have notes of cases amongst our out-patients, who slept the first night, having taken during the morning and day four doses of the salt, and I have never failed in demonstrating to you, by the usual tests, the presence of the medicine in the urine passed the following morning. The purity of the hydriodate, you are aware, is ascertained, before any new parcel is used by the apothecary. There is very little difference, therefore, in the period at which the pain may be relieved; and when you consider that the iodine treatment avoids a painful, though brief operation, and is not followed by an open sore, I think you would prefer, in your own instance, giving it a previous trial.

The second ground of preference, namely, the earlier period at which the patient can resume his occupation, is clearly on the side of the iodine, for the case treated by mercury occupied 37 days, that by incision 28 days, and that by the hydriodate of potass 13 days. In the two latter cases, matter had formed beneath the periosteum, and this circumstance, while it accounts for healing after incision being a few days slower than in the first case of Sir Philip Crampton, gives an additional value to the iodine, for it displays its power over the disease, when even advanced to suppuration, and its capability of curing it in a shorter period.

With respect to the comparative safety of the three modes, you will remember that some degree of constitutional disturbance followed the incision, and that ulceration of the cheeks and diarrhoea succeeded to the mercurial plan. Amongst the consequences of the use of hydriodate of potass, none have occurred under my observation at so early a period as to oblige us to desist; and if gastric irritation should occur, which never happened in any instance where it was used for periostitis, it is very easily removed. The more remote effects of the hydriodate, of which I shall speak hereafter, have nothing to do with our present inquiry.

As regards the origin of the periostitis, I do not think it exerts much influence, or opposes any special obstacle, to the success of this medicine. The form which Dr. Macleod, in his Lectures on Rheumatism, designates periosteal rheumatism, appears to yield with facility to its operation. You must not, of course, overlook the general condition of the patient, or the existence of fever, if it should exist, in the latter case.

There is another medicine of great power in subacute and chronic periostitis: this is sarsaparilla. I think Sir Philip Crampton speaks too feebly of its powers in this complaint, and indeed he appears to limit its exhibition to those cases in which periostitis is connected with that cachectic state produced by protracted courses of mercury. In these, he says, it may be given with considerable advantage; but he does not say that it is capable of curing the disease alone. I have given it repeatedly with the effect of removing the pain in a few days, since it was suggested by Sir B. Brodie, a few years ago, in the case of a gentleman who consulted him when attacked in London by this painful malady. In this case there was no mercurial cachexia to give rise to the disease, and here, as well as in several other instances, where I did not expect to have an opportunity of superintending the action of iodine, sarsaparilla has completely succeeded in removing the symptoms.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

PATHOLOGICAL DEPARTMENT.

April 7, 1840.

DR. CLENDINNING in the Chair.

Dislocation of the Elbow Joint, followed by Anchylosis of the Ulna to the Humerus, with ligamentous union of the Radius.

MR. LANGSTAFF exhibited a preparation of dislocation of the elbow joint. The ulna and the radius have been thrown to the outside; so that the articulating surface in the lower head of the humerus for receiving the ulna, and the cavities for the reception of the coronoid and olecranon processes, are exposed to view, while the ulna is fixed in a mass, by bony union, to the rounded smooth surface for the articulation of the radius. Attached to the external condyle is a fibro-cartilaginous growth, in which a portion of bone is imbedded, forming a buttress for the head of the radius. Between this part and the cup-like depression on the head of the radius, there is a firm ligament, of a triangular shape, which bears a resemblance to the round ligament of the hip-joint, and must have permitted rotatory motion. The lesser sigmoid cavity, for the lodgment of the radius upon the ulna can still be observed, and is not much changed in appearance. It is perceived, from the preparation, that the patient retained the rotatory motions of the radius; but it is also observed, that his arm was united, in the extended position, so as to have prevented flexion altogether.

Mr. Liston made some observations in regard to the period when it might be con-

sidered hopeless to reduce a dislocation of the elbow joint, and mentioned three weeks as the latest time; remarking, that he had seen a band of surgeons foiled in the attempt when only a fortnight had elapsed. He said, that patients who had suffered dislocation of this joint, if due means were employed, might often recover the motions of the limb to a very striking degree.

Two preparations, exhibiting a multilocular appearance of the descending colon, with caecal cavities, containing concretions of cholesterine, covered with calcareous deposit.

Mr. E. Wilson, in the former meeting of the pathological department, had referred to the above preparations, as may be seen by our report in the last number of the *GAZETTE*. They exhibit different views of a part of the colon, which presents some unusual appearances. The interior of the bowel is subdivided by numerous septa, stretching nearly quite across; and various pouches, or diverticula, capable of receiving the point of the little finger, project from the gut. In each of these diverticula, concretions, varying in dimensions, but commonly of a size to fill the pouches in which they are contained, are lodged. Upon examining these chemically, they were found to consist of 80 parts cholesterine; about 20 parts of carbonate of lime; and 2 of animal residue.

Extensive Ossification of the Pericardium.

Mr. E. Wilson next placed on the table a heart, in which the pericardium surrounding it was converted into a thin case of bone. The calcareous deposit was included in the fibrous tissue of the membrane; and reached to the points of reflection of the serous membrane upon the heart, being arrested there. It was nearly of an equal thickness in all its extent; and it admitted of being cut with strong scissors. Adhesions of a firm nature were contracted between the pericardium and the surface of the heart. The cavities of the heart presented no unusual appearance; and the aorta, with its valves, seemed healthy. The tendinous part of the diaphragm, where the pericardium is connected with it, was converted into a firm cake by the osseous deposit, the concretion stopping suddenly at the part where the muscular fibres commence. In a communication sent to Mr. Wilson with the preparation, it was stated that the patient was sixty-five years of age, and had been ailing for twenty-five years. It was never, however, suspected, during life, that there was any derangement of the circulating system.

Ossification of a portion of the heart.

Mr. Shaw exhibited a preparation of

ossification of a considerable portion of the walls of the left ventricle of the heart. In this specimen, all the tissues that form the parietes were involved, inasmuch as the bony deposit presented both internally and externally, and composed the substance of the heart at this part. The coronary arteries were ossified, and had their coats much thickened. The valves of the aorta had warty excrescences upon them; and there were particles of ossific deposit on the inner surface of the aorta itself. The right cavities of the heart presented a healthy appearance. About eight ounces of serum were effused in the pericardium. The patient had been subject, for three years before his death, to attacks of dyspnoea, attended with violent palpitation of the heart, induced by exercise, or any cause of excitement.

A discussion arose as to the primary seat of such ossific deposits; in the course of which, Dr. Clendinning called to mind a specimen exhibited by Andral to his class, in which about a foot square had been converted into bone. Dr. H. Lec had seen a heart, in the possession of the late Mr. A. Burns, of Glasgow, converted entirely into bone. On its being questioned whether the muscular tissue was ever the seat of ossific deposit, reference was made by Dr. Clendinning and Mr. Arnott to a skeleton which Mr. Abernethy was wont to show to his class, where deposits of the kind alluded to were formed in the course of the different muscles, and especially along the back. These were caused, as Mr. Abernethy explained, by the infliction of blows, or other injuries on the parts,* when the patient was alive.

Large tumor in the brain.

Mr. Bainbridge exhibited a tumor of unusual dimensions, found in the posterior part of the cerebrum of a child, nine years of age. It was accompanied with a drawing by Mr. Sylvester. The tumor was composed of a dense substance, firm, and elastic, presenting in some degree the appearance of medullary sarcoma, as frequently seen when affecting the testis. It was marked on the face of the section that had been made to expose its interior structure, with areolæ of fibres, which supported a softer and yellower substance, that approached to the appearance of scrofulous tubercle. The whole tumor, however, was denser than those tubercles are usually found to be; it was easily separable from the part of the brain on which it

* Were these not mere specimens of exostosis? Such growths commonly follow blows, in patients subject to that disease. See a skeleton, in which nearly all the joints are soldered together, or immovably locked by exostosis, in the College of Surgeons' Museum. See also Phil. Trans. vol. xli. p. 10.—ED. GAZ.

was imbedded, owing to the brain around it being softer in texture than natural. It was nearly spherical in shape, the diameter being $3\frac{1}{2}$ inches; it was lodged in the posterior part of the left hemisphere, reaching from the upper surface down to the corpora quadrigemina; which bodies were found pulpy, and of a deeper red colour than is natural. The dura mater adhered so closely to the upper surface of the tumor that it was necessary to dissect it off carefully with the scalpel to expose the tumor. Three ounces of serum were found within the ventricles; otherwise, the brain appeared healthy, as were all the other viscera of the body. The child was observed by her mother, to be ill, more or less, for two years before her death; but no decided symptoms of affection of the head manifested themselves till thirteen weeks before she died. The first indications of illness were merely a heaviness or languor, that made her indisposed to join her companions in play, and would induce her to lie down, until the time for going to school arrived, when she evinced great alacrity, and was superior in her attainments to the rest of the scholars. She occasionally complained of headache, and waked up at night with pain in the head; she also vomited frequently. Thirteen weeks before death, she was seized with convulsions, and after the first fit it was found that the left side was paralyzed, and there was a squint in the left eye. She had two other fits, within three days of each other, and these consisted principally in spasms affecting the left side.

Immediately subsequent to the occurrence of these fits, she fell into a comatose condition, in which she continued for a week. At the expiration of this time she awoke, and, in her natural tone, begged to have a pear out of her bag; which it was remembered had been put into her bag previous to her becoming comatose. It was now discovered that she had lost the power of vision in her left eye. She fell again, at different times, into a comatose condition; without, however, being convulsed. Gradually she became blind in both her eyes. During the intervals, it was observed that her mental faculties remained unaffected, and her memory was especially acute. She complained particularly of pain in her head and in her left arm. An hour or so before death, she was again seized with convulsions, which lasted till she died.

Some hesitation was expressed by the members, after inspecting the tumor, as to affirming what was its precise nature—whether fibrous or medullary; but, as far as we could judge of the prevailing opinion, it leaned towards it being the medullary sarcoma.

Mr. Arnott drew attention to the remarkable extent to which the brain sometimes admits of being compressed: whether by a solid tumor, as in the present instance, or by serous effusion, if that compression take place in a gradual and slow manner. He gave two instances that came under his observation, that afforded striking illustrations of this fact.

Large Osseous Tumor of the Uterus, which nearly filled the true pelvis, and occupied part of the left iliac region.

Mr. Arnott was induced to exhibit to the meeting a preparation which he had formerly shewn to the Society, before the pathological meetings were established, as he had now, through the kindness of Professor Daniel, the opportunity of describing its chemical composition. In a former report of the proceedings of the Society, we described the appearance and history of this tumor. Mr. Arnott briefly mentioned again that it was taken from a lady, 72 years of age, who had fallen when walking in the streets, and had suffered rupture of the bowel, from a portion of the intestine lying over this hard tumor being injured in her fall, so as to burst and give rise to fatal peritonitis. The tumor was so firmly impacted in the true pelvis, and so nearly filled it, that, after being detached with the knife, it required powerful force to extract it. The wonder was, that the lady did not suffer material inconvenience from the tumor, either in regard to the action of the bowels or the passage of the urine. Mr. Arnott stated, that until a short time before the accident, the patient was accustomed to take exercise on foot and on horseback, and enjoyed excellent health. The tumor had been observed, seemingly of nearly the same size as at her death, for thirty-six years.

In 1808, having been alarmed by an opinion communicated to her that it was cancer, she had the joint advice of Sir Richard Croft and Dr. Denman, who examined it, and merely recommended rest. A section of the tumor exhibits a hard bony structure, with some sub-divisions or lobes, marking, apparently, that it consisted originally of a series of distinct fibrous tubercles, now converted into bone. Professor Daniel has ascertained that there enter into its composition—

Of phosphate of lime	56 parts.
Animal matter	.. 35
Carbonate of lime	5

the remainder being made up with alkaline and earthy salts in minute proportions. Thin slices have been examined microscopically; and the observations have tended to show that it possesses the same structure as bone, osseous corpuscles having been detected in its substance.

Mr. Langstaff concurred with Mr. Arnott in his opinion as to the tumor having been originally of a fibrous structure. He referred to two cases in which death was occasioned by tumors of that nature occupying the true pelvis. In one, the transverse arch of the colon was ruptured from obstruction to the course of the fæces; in the other, rupture at the fundus of the bladder took place, owing to the tumor compressing the neck of the bladder.

Tumor on the exterior of the thorax, communicating with the cavity of the pleura at the interval between the portions of a fractured rib.

Mr. E. Wilson shewed the parts which he had removed in a recent dissection: The subject of the dissection was a child sixteen months old, that had been picked off the streets, and taken to the St. Pancras Infirmary, where she shortly afterwards died. The nurse drew his attention to a swelling situated below the inferior angle of the scapulæ, which he stated had appeared suddenly only two days before the death of the child. Upon pressing this tumor, the contents were easily evacuated, and it disappeared. On proceeding with the dissection, he found a cyst between the ribs and intercostal muscles on the one hand, and the latissimus dorsi and scapula on the other. One of the ribs, on which the cyst was formed, was discovered to have been broken, the edges being ununited and rounded off. Between these portions a small opening, leading into the interior of the thorax, was perceived. When the thorax was next examined, a large accumulation of serum was found occupying the cavity of the pleura, and compressing the lung to a small size.

ROYAL INSTITUTION.

Friday, March 27th, 1840.

On the Statistics of Disease and Mortality in the Metropolis. By GEORGE GREGORY, M.D.

THE Act for the Registration of Births, Deaths, and Marriages, passed in 1836, and came into operation on the 1st July, 1837. The earliest fruits of this truly national measure was a valuable document, the first report of the Registrar General, laid before Parliament in 1839. The second result was the publication of the new Tables of Mortality, which commenced on the 5th January, 1840, and are continued weekly. These tables, said the lecturer, constitute a most interesting addition to the stock of our facts on vital statistics. To profit by them, however, some previous information is requisite,

which all may not possess. To supply that preliminary knowledge, to explain the machinery by which the new tables and the modern system of registry are worked out, and to point out the chief results which have been obtained from them, were the objects of the lecture. The limits of the old and present metropolis, its growth from the time of Charles II., the existing population of London, its rapid rate of increase, and the proportion in which the several groups of the population (the young, the adult, and the aged,) co-exist, were the topics first alluded to.

It appears that, in the time of Charles II., the population of London was short of half a million. In the year 1665, the deaths recorded in the bills of mortality were, by plague alone, 68,596; total—97,306, so that more than one-fifth of the population of London died in that year. The Registrar General includes, under the term metropolis, an area of about seventy square miles, extending from Stoke Newington, in the north, to Dulwich, in the south: from Hammersmith in the west, to Woolwich in the east. The extreme distance is nearly ten miles. At the census of 1821, the population of the metropolis, (taken in this extended sense,) was 1,328,671. In 1831 it had advanced to 1,594,890. The rate of increase had varied in the five districts into which the Registrar General divides the town, being in the northern 33 per 1000; in the southern, 21; in the eastern, 20; in the western, 18; and in the central district only 5 per 1000 annually. Calculating a like increase in the years since 1831 (that is 18 per 1000, on an average, of the five districts,) the present population of London is 1,955,000, the increase being such that London annually, besides compensating the deaths, receives and amalgamates into its population 36,000 additional souls, or a town as big as York.

In all parts of the world the births of males exceed the births of females. Mr. Finlaison calculates that for every million of females born there are born a million and fifty thousand males, the proportions being 79 to 83, or very nearly 20 to 21. The disproportion, however, of the sexes rapidly diminishes, so that in all mixed populations the females predominate. In London, in 1831, the proportions were 739,719 males to 855,171 females.

The imperfections in the act, regarding the registry of births, prevent us from knowing exactly how much of the annual increase in the metropolitan population is owing to excess of births above deaths, and how much to influx of *advenæ*. Calculating the births at 30, compared to the deaths as 20, we conclude that there are

70,000 children born annually in London ; and this leads to the deduction that one half of the annual increase is owing to excess of births, and the other half to importation from surrounding rural districts.

The lecturer then proceeded to give a brief sketch of the origin, progress, and decay of the old bills of christenings and burials, prepared by the worshipful Company of Parish Clerks. Due credit was given to them for their efforts, in 1819, to improve the system of metropolitan registration. They spent nearly 1000*l.* in a vain effort to obtain an Act of Parliament for that purpose. The machinery of the recently issued Tables of Mortality (which, it will be remembered, are registers of *births* and *deaths*, not of christenings and burials) was then explained, and the same brought under review, and compared with the results of the old bills, and with the registration of provincial districts. The introduction of the *cause of death* into the schedule prescribed by the Act was a great improvement, for which we stand indebted to the British Association of Science.

The deaths in London in 1838 amounted to 52,698; being at the rate of 1613 per week, 144 per day, six per hour, or one in every ten minutes. This may be considered as a fair average; being at the rate of one death in 36 of the whole population, or 28 per thousand. The deaths since the 5th January, 1840, have fallen short of this average by 100 per week, as was shewn by reference to tables which have already appeared in this journal. The remarkable uniformity in the weekly numbers, as also in the proportion of the sexes carried off, and in the ratio of the young, the adult, and the aged, was next pointed out and illustrated. In all observations on these and other tables of mortality, it must be borne in mind in what ratio these three great groups of the population co exist. The proportion appears to be pretty nearly the same in all countries. On an average of 100 persons, 32 are under fifteen; 62 between fifteen and sixty; and 6 above sixty: that is to say, there are twice as many grown persons as young persons, and six times as many young as aged persons.

The mean duration of human life (technically called the *vie probable et moyenne*) has considerably increased, as is remarkably well shown in the phenomenon so long presented by the bills of mortality, of stationary mortality with increasing population. This improvement in the value of life is perceptible even in the earliest infancy. Between the years 1733 and 1737, the proportion of children in London dying under two years of age was 393 per 1000, while in 1837 the proportion was only 290 per 1000. In London, about half the num-

ber born die before reaching the age of twenty-two. In some rural districts, the half do not die before the age of thirty-six; while, in confined localities and manufacturing populations, the one half of the children born die before attaining the age of eighteen. In Leeds and Manchester, half of the males are dead at the age of eight, and half the females at eighteen. The proportion of deaths in the three groups of the population, specified in the new tables, are,—under fifteen, 40 per 1000; the adult, 16 per 1000; the aged, 97 per 1000. Average, 28. From these data we calculate, that, of the 658 members of which the House of Commons is composed, 13 may be expected to die annually.

The new tables do not afford as yet any materials for determining the relative mortality of the seasons in London. As far as is known we have reason to conclude, that here the healthiest seasons are summer and autumn, the most fatal winter and spring. Under all circumstances, the rate of mortality is influenced by the density of the population; their comparative state of comfort or indigence; and in a considerable degree, also, by the opportunities enjoyed of ventilation and purification. In London, the most unhealthy districts are Whitechapel, Bethnal Green, and St. Giles's; the most healthy are the suburban districts, and the parish of St. George, Hanover Square. Out of 1000 females, living in Whitechapel, there die annually 38; out of 1000, living in St. George's, Hanover Square, there die annually only 17. The proportion of deaths in London, compared to that of rural districts, is as 24 to 18, or 4 to 3.

A considerable portion of the lecture was devoted to an elucidation of the doctrine of Climacterics, or of the disposition in the human body to certain developments at certain fixed periods. The ascending Climacter is 7, 14, and 21, marking the great periods of childhood, puberty, and manhood, were first adverted to and commented on. The descending scale, 49, 63, and 81, were shewn to receive no countenance whatever from statistical investigation. So far from it, these years are peculiarly light in the calendar of mortality. The descending Climacterics are not multiples of 7 and 9, as the Greeks and Romans fancied, but multiples of 10. In London, the most fatal years are 40, 60, 70, 80, 90, and 80. The order varies slightly in other districts, but the disposition to a decennial augmentation of mortality is every where discernible. The correctness of this theory of a decennial Climacter has lately been called into question, but not on sufficient grounds. It was first pointed out by Mr. Rickman in 1831.

The latter part of the lecture was to

have comprised a classification and analysis of the principal forms of disease by which the metropolitan population is carried off, but the lateness of the hour prevented the lecturer from developing fully this branch of his subject. He took occasion briefly to allude to the fluctuations which may be perceived in the prominent disorders which thin the population of London. Hooping-cough, which in the seventeenth century was scarcely mentioned among the fatal diseases of London, destroyed in 1838 more than 2,000 persons. Vaccination, by closing one avenue to death, serves indirectly to open another, as it carries the infantine population forward to that age when it becomes obnoxious to another tribe of diseases. The encephalic diseases of children, and small-pox, which were the great metropolitan scourges in the last century, have now given way to pneumonia, hooping-cough, and scarlatina. The only disease which retains the same place in the catalogue of fatal ailments which it held in 1654, is consumption, which the lecturer seemed disposed to view as the great gulph into which all improvements in medical practice, and all ameliorations in the condition of mankind, tend ultimately to drive the population. If we rightly comprehend the tenor of his concluding sentences, his notion appeared to be, that *natural decay* and *consumption* were the two ultimate modes of death; that the former was every year steadily advancing to assume that place in the list which the philanthropist would desire, but that consumption is still (as it always has been) immeasurably a-head of all other disorders in the tables of mortality, and likely so to continue, in spite of every effort of human skill.

The lecturer divided the complaints which carry off the great mass of the metropolitan population, into four groups. 1. Those which originate in congenital delicacy of frame, or those structural and functional peculiarities impressed on the individual at birth, and transmitted from parent to offspring. To this head belong convulsions, hydrocephalus, infantile pneumonia, croup, and, above all, consumption. 2. Those which result from changes occurring in the body from the mere influence of time, such as apoplexy, palsy, asthma, heart affections, dropsy, mortification, cancer, and natural decay. 3. Those which result from the operation of specific poisons, received into the body from without, and which operate independently both of original constitution and the influence of time; of this kind are typhus, small-pox, measles, scarlet fever, hooping cough, and cholera. 4. Those which originate in accident, or irregularities of diet and

mode of life, or the nature of the occupation or locality. To this class belong childbirth, hydrophobia, gout and rheumatism, erysipelas, ague, violence. Nineteenths of mankind are carried off by the three first classes, and one-tenth by this last section.

ROYAL SOCIETY:

February 13, 1840.

On the Source of Power in the Voltaic Pile.

THE reading of a paper, entitled, "Experimental researches in Electricity, 16th Series." By Michael Faraday, Esq., D.C.L., F.R.S., &c., was resumed and concluded.

The determination of the real source of electrical power in galvanic combinations has become, in the present state of our knowledge of electricity, a question of considerable importance, and one which must have great influence on the future progress of that science. The various opinions which have been entertained by philosophers on the subject may be classed generally under two heads; namely, those which assign as the origin of voltaic power the simple contact of dissimilar substances, and more especially of different metals; and secondly, those which ascribe this force to the exertion of chemical affinities. The first, or the theory of contact, was devised by Volta, the great discoverer of the voltaic pile; and adopted, since it was promulgated by him, by a host of subsequent philosophers, among the most celebrated of whom may be ranked Pfaff, Marianini, Fichner, Zamboni, Matteucci, Karsten, Bruchardat, and also Davy; all of them bright stars in the exalted galaxy of science. The theory of chemical action was first advanced by Fabroni, Wollaston, and Parret; and has been since farther developed by Oersted, Becquerel, De la Rive, Ritchie, Pouillet, Schonbein, and others. The author of the present paper, having examined this question by the evidence afforded by the results of definite electro-chemical action, soon acquired the conviction of the truth of the latter of these theories, and has expressed this opinion in his paper published in the *Philosophical Transactions* for 1834.

The author, after stating the fundamental doctrine laid down by Volta, proceeds to give an account of various modifications in the theory introduced by subsequent philosopher, and of different variations in the views of these who, in the main, have adopted the chemical theory. Being desirous of collecting further

and more decisive evidences on this important subject, he engaged in the series of experimental researches which are detailed in the present memoir.

It is assumed, he observes, by the advocates of the contact theory, that although the metals exert powerful electromotive forces at the points of mutual contact, yet in every complete metallic circuit, whatever be the order or arrangement of the metals which compose it, these forces are so exactly balanced as to prevent the existence of any current; but that, on the other hand, fluid conductors, or electrolytes, either exert no electromotive force at their place of contact with the metals, or, if they do exert such a power, the forces called into play in the complete circuit are not subject to the same law of compensation as obtains with the circuits wholly composed of metallic bodies. The author successfully combats this doctrine, by bringing forward a great number of instances, where certain fluids, which have no chemical action on the metals, with which they were associated in the circuit, are in themselves such good conductors of electricity, as to render evident the current which could have arisen from any contact of the metals, either with each other or with the fluid; the evidence of their possessing this conducting power being their capability of transmitting a feeble thermo-electric current from a pair of plates of antimony and bismuth. The following he found to be fluids possessing this property in a high degree; namely, a solution of sulphuret of potassium, yellow anhydrous nitrous acid mixed with nearly an equal volume of water, very strong red nitric acid, and a mixture of one volume of strong acid with two volumes of water. By employing the solution of sulphuret of potassium as an electrolyte of good conducting power, but chemically inactive with reference to either iron or potassium, and associating it with these metals in a circuit, formed by two test-glasses containing the solution, into one of which was immersed a plate of platina and a plate of iron, and in the other two plates of platina; and the circuit being completed by wires of the same metals respectively, joining the iron-plate in the first glass with one of the platina-plates in the second, while the other two platina plates were united by platina wires, interrupted at one part by a short iron wire which joined their ends;—it was found by the test of an interposed galvanometer, that, as no chemical action took place, so no electric current was produced; yet the apparatus thus arranged could transmit a very feeble thermo-electric current, excited by slightly raising the temperature of the wires at

either of their points of contact. Hence, the inference may be drawn, that the contact of iron and platinum is of itself productive of no electromotive force. On the other hand, the author shows, that the interposition in the circuit of the smallest quantity of an electrolyte, which acts chemically on either of the metals, the arrangement remaining in all other respects the same, is immediately attended with the circulation of an electrical current far more powerful than the thermo-electric current above mentioned. A great number of combinations of other metals were successively tried in various ways, and they uniformly gave the same results as that of iron and platina. Similar experiments were then made with various metallic compounds, and also with other chemical agents; and in all cases the same general fact was observed; namely, that when no chemical action took place, no electrical current was excited; thus furnishing, in the opinion of the author, unanswerable arguments against the truth of the theory of contact. The only way in which it is possible to explain these phenomena on that theory, would be by assuming that the same law of compensation as to electro-motive power is observed by the sulphuret of potassium, and the other fluids of corresponding properties, as obtains in the case of the metals, although that law does not apply to the generality of chemical agents; and in like manner, different assumptions must be made in order to suit the result in each particular combination, and this without any definite relation to the chemical character of the substances themselves; assumptions, which no ingenuity could ever render consistent with one another. At the conclusion of the paper, the author describes some remarkable alternations in the phenomena which occur when pieces of copper and silver, or two pieces of copper, or two of silver, form a circle with the yellow sulphuretted solution; and which lead to the same conclusion as the former experiments. If the metals be copper and silver, the copper is at first positive, and the silver remains untarnished; in a short time the action ceases, and the silver becomes positive, at the same time combining with sulphur, and becoming coated with sulphuret of silver; in the course of a few minutes, the copper again becomes positive; and thus the action changes from one side to the other in succession, and is accompanied by a corresponding alternation of the electric current.

VACCINATION EXTENSION BILL.

To the Editor of the Medical Gazette.

SIR,

I BEG to forward to you, for insertion in the MEDICAL GAZETTE, the following copy of resolutions agreed to at the last meeting of the Medical Institution of Liverpool, on the subject of the Vaccination Extension Bill at present before parliament.—I am, sir,

Your obedient servant,

JOHN SUTHERLAND, M.D.
Secretary.

Liverpool, 4th April, 1840.

At a meeting of the members of the Medical Institution of Liverpool, held on Thursday, 26th March, 1840, James Dawson, Esq. President, in the Chair, it was resolved—

1st. That the practice of vaccination offers a very sure means of preventing small-pox, and is not attended with any serious risk, whilst inoculation is not more sure as a means of prevention, and is attended with great danger: it is, therefore, the opinion of the Medical Institution of Liverpool, that the practice of inoculation by all parties, medical men as well as others, should be discouraged by penal liabilities, in the bill now before parliament, entitled, "An Act to extend the practice of Vaccination."

2d. That as the efficacy of vaccination depends very much on the efficient performance of the operation, the Medical Institution of Liverpool is of opinion that it is of great importance that such measures should be adopted as will prevent or discourage ignorant or unqualified persons from taking upon themselves the performance of an operation which, if unsuccessful in its results, is worse than useless; inasmuch as it gives the semblance of security where there is no security whatever.

out their co-operation, but little could be effected in the way of improvement. Let the public bear in mind the extent to which they are dependent on the medical profession for health and life, the greatest of worldly blessings. Let them recollect how readily medical opportunities are abused, and the temptations to their abuse; the mysteries of the sick-chamber*, the nursery, and the lunatic asylum; all affording fearful opportunities to the unprincipled practitioner, to betray his trust for the sake of lucre—not to speak of the minor instances in which fraud and imposture can be resorted to. They should also remember that they are dependent, not only on the conscientiousness of their medical attendant, but also on the honesty of the apothecary or chemist. Without chance of detection, it is in his power to substitute for the ingredients prescribed, others of inferior cost and efficacy; for, in a compound medicine, not even a member of the trade could perceive the change. Yet life itself may hinge on the difference.

It is not by persons of a respectable rank of life (habituated to expensive luxuries) seeking the cheapest way of accomplishing their object, where the most important of all its necessities are concerned, and cutting down the medical attendant to half-a-crown per visit, or bargaining with the apothecary as with a fish-woman, that educated and skilful practitioners are to be obtained for their service: there will, no doubt, be always plenty of physicians, surgeons, apothecaries, and druggists†; but the public will have occasion to rue the day that, by depreciating medical practice, they cause its trusts to pass into the hands of the ignorant and unprincipled. To be brief, in a country like Britain, where money is almost the test of respectability, the medical profession must be properly remunerated, if that profession is to be an occupation for the better ranks, and not for the dregs of the community. As in America, the recovery of his fee ought to be as far facilitated, and the scale of remuneration at least as large, in the case of the physician‡ or surgeon,

OBSERVATIONS ON MEDICAL REFORM.

BY A PROFESSOR IN THE SCHOOL OF PHYSIC IN IRELAND.

THE observations on this subject, in a preceding number of the LONDON MEDICAL GAZETTE, had reference to the share that the legislature ought to take in the matter. That which appertains to the parties, the profession and the public, is of still greater importance, since, with-

* Solicitations to midwifery practitioners to procure abortion, for a high fee, are not obsolete. It is still easier to accomplish infanticide by connivance of the accoucheur.

† An English lady, attended for the first time by a Dublin accoucheur, could scarcely be persuaded that she could have the milk in her breasts for suckling her infant, without swallowing a number of white mixtures termed "milk-draughts;" which had been declared, in England, to be indispensable for the purpose.

‡ Law and usage are at variance as to the legal rights of physician and surgeon to recover their fees. Usage makes a distinction, in this respect, between the departments; but law includes surgery in physic—"forasmuch as the

as in that of the attorney; and, unlike what it is in Britain at present, juries ought to lean to the just claims of medical men, and to the support of their interests, as much as they now incline the opposite way. With respect to public institutions, it ought to be recollected that the medical man is a grade above the providore, or housekeeper, in rank; and this should be considered in settling his salary. Woe to the public in the end, if the present system of cheapening, in all medical matters, shall continue.

Apothecaries' prices ought to be arranged by a medical board, on the estimate that the medicines are procured of the best quality, and the compounds of a known* strength. In arranging the schedule of prices, full allowance should be made for cost of education, the occupation of time, expense of establishment, &c., which the public leave out of account altogether, and expect to have an assortment of medicines kept ready for their use, with attendants and messengers, at the cost of merely a discount on the price of the portion of raw article sold. For instance, they think that the apothecary ought to sell an anodyne draught for, at the utmost, not more than double the price of the cinnamon water and laudanum it contains, never considering that the cost of the ingredients is to the apothecary of as little relative importance as that of the ink and paper to a scrivener. In order to meet the imposition, as they term it; they occupy ten-fold the time, and take ten-fold the trouble the price is worth, in order to get the ingredients at a druggist's and make them up at home, at the risk of total failure in the remedy, or of being, perhaps, poisoned.

There ought to be, as health or life is valued, a steady co-operation between physicians and the public to support those pharmaceutical establishments exclusively, where the measures requisite for the public weal shall be pursued, and the proprietors of which have subscribed and adhered to the regulations. Any attempt at underselling ought to be met as a dishonest proceeding, equivalent to that of deterioration or adulteration, and by a protest, on the part of the medical attendant, against the establishment. If the public are afraid that high prices might raise the apothecaries too nearly to a level with the huxter's bill, let them recollect that "a little and good" is a saying more true, with

respect to medicine, than any thing else, and that if they consented to use a quarter of the quantity of drugs, (consumed at home or in charitable institutions,) and at four-fold the price, the trade would be as well, and themselves incomparably better, off.

Many persons are apprehensive that ere long all medical business will pass into the hands of the general practitioner, and that the apothecary will supersede the physician and surgeon; an opinion as strongly entertained, and the evils of general practice as loudly deprecated, a century and a half ago* as now, and still the crisis has not arrived yet. Those who look to the signs of the times must, indeed, see that there is no department of the profession less likely to be in vogue after a few years than that of the extemporaneous compounder. There are daily accumulating such numbers of palatable, and, indeed, excellent, ready-made compounds, at the establishments of respectable chemists, that it is more likely that the physician or surgeon will draw on these resources instead of the apothecary's dispensary, or manage the disease on, what are termed, homœopathic principles, than that he will be superseded by a less skilful practitioner, merely because the latter is licensed to combine medicines *pro re natâ*. The public are learning that there is no charm in medicine, and that drugs are to the physician what his instruments are to the surgeon—indispensable tools, and nothing but tools—more likely to do mischief than good if not properly handled. It is not the precise form of the mixture or the pill, but the "where" and the "when," that its active principles (almost)—no matter how compounded, are to be brought into operation, that form the nicety of treatment. The public once thought the physician "cured" a fever, the surgeon "set" a broken leg, and that the accoucheur "delivered" in his vocation. That day is gone by; all are known now to be but sentinels on the efforts of nature, and, in the great majority of cases, to accomplish their objects by passive or negative treatment, medicines are necessary—a few, and the best of their kind.

EXTRA-UTERINE FŒTATION.

A REMARKABLE example of this is recorded by Dr. Spaeth, in the *Medicinisches Correspondenz-Blatt*, in which portions of the fœtus were discharged per anum for twenty years afterwards.—*American Journal*.

science of physic doth comprehend and contain the knowledge of surgery, as a special part and member of the same."—Stat. 32 Hen. 8, cap. 40.

* According to Mr. Guley (Magendie, p. 85.) different specimens of "prussic acid," sold for medical use, varied as 4 to 1 in strength.

* See the essay of Jonathan Goddard, M.D., Fellow of the College of Physicians, in the reign of James II., as published in the Harleian Miscellany.

Showing the Number of Deaths from all Causes, registered in the Four Weeks ending Mar. 28, 1840.

Causes of Death.	March 1840.				Weekly Average, 1838.
	1st—7th.	8th—14th.	15th—21st.	22nd—28th.	
Small-Pox.....	9	8	13	12	73
Measles.....	15	19	14	15	11
Scarlatina.....	36	24	47	28	29
Whooping Cough.....	26	17	26	17	40
Croup.....	9	10	8	11	7
Thrush.....	8	2	3	2	6
Diarrhœa.....	3	6	5	..	8
Dysentery.....	..	1	..	2	2
Cholera.....	..	..	..	..	.3
Influenza.....	1	2	3	1	1
Typhus.....	26	26	29	15	78
Erysipelas.....	5	3	3	4	8
Syphilis.....	1	2	1	..	1
Hydrophobia.....	..	..	..	..	.2
Total.....	139	120	152	107	265
Cephalitis.....	12	9	13	9	10
Hydrocephalus.....	45	35	33	33	34
Apoplexy.....	19	17	20	14	19
Paralysis.....	12	26	9	14	14
Convulsions.....	68	62	59	60	67
Epilepsy.....	9	5	3	3	4
Insanity.....	2	4	1	3	1
Delirium Tremens.....	1	1	3	1	1
Dis. of Brain, &c.....	10	11	10	9	6
Total.....	178	170	151	146	156
Quinsey.....	5	2	1	..	2
Bronchitis.....	19	17	12	16	8
Pleurisy.....	2	..	1	3	2
Pneumonia.....	76	64	85	71	71
Hydrothorax.....	10	7	12	5	6
Asthma.....	45	51	41	35	28
Consumption.....	136	148	163	151	146
Dis. of Lungs, &c.....	18	19	17	22	10
Total.....	311	308	332	303	275
Pericarditis.....	2	..	..	1	.3
Aneurism.....	..	1	1	..	.5
Dis. of Heart, &c.....	9	20	13	15	15
Total.....	11	21	14	16	16
Teething.....	20	8	9	14	15
Gastritis—Enteritis.....	17	21	6	20	17
Peritonitis.....	3	3	..	3	1
Tabes Mesenterica.....	6	4	9	5	3
Ascites.....	1	..	..	2	.4
Ulceration.....	4	..	2	1	1
Hernia.....	2	2	4	2	2
Colic or Ileus.....	1	4	1	3	4
Dis. of Stomach, &c.....	3	6	5	3	4
Hepatitis.....	2	..	2	1	1
Jaundice.....	2	3	2	1	2
Dis. of Liver, &c.....	10	4	8	12	7
Total.....	71	55	48	67	57

Causes of Death.	March 1840.				Weekly Average, 1838.
	1st—7th.	8th—14th.	15th—21st.	22nd—28th.	
Nephritis.....	..	..	..	..	.5
Diabetes.....	..	..	1	..	.4
Stone.....	2	..	..	..	.4
Stricture.....	1	..	..	2	.6
Dis. of Kidneys, &c.....	3	3	4	4	3
Total.....	6	3	5	6	5
Childbed.....	10	8	10	11	8
Ovarian Dropsy.....	..	..	..	1	.3
Dis. of Uterus, &c.....	1	1	3	2	2
Total.....	11	9	13	14	10
Rheumatism.....	2	2	3	5	4
Dis. of Joints, &c.....	4	2	1	3	4
Total.....	6	4	4	8	8
Ulcer.....	..	..	..	..	.4
Fistula.....	..	..	..	..	.4
Dis. of Skin, &c.....	..	1	3	1	.4
Total.....	..	1	3	1	1
Inflammation.....	7	11	6	7	18
Hæmorrhage.....	3	1	3	4	4
Dropsy.....	35	47	39	31	34
Abscess.....	3	6	8	4	4
Mortification.....	9	7	9	6	4
Scrofula.....	2	1	4	2	1
Carcinoma.....	5	6	3	7	6
Tumor.....	1	1	2	1	1
Gout.....	1	2	1	1	1
Atrophy.....	6	5	9	4	4
Debility.....	25	16	21	22	12
Malformations.....	..	1	2	..	1
Sudden Deaths.....	17	11	14	13	12
Total.....	114	115	121	102	102
Old Age, or Natural } Decay..... }	84	75	71	82	79
Intemperance.....	..	..	..	..	.4
Privation.....	1	..	..	..	.6
Violent Deaths.....	33	25	27	24	25
Total.....	34	25	27	24	26
Causes not specified..	4	2	5	5	13
Deaths from all Causes	969	908	946	881	
Weekly Average, 1838	..	..	..	..	1013

AGES.			
March 1840.	0—15	15—60	60 & upwards.
1st—7th	408	321	239
8th—14th	339	326	243
15th—21st ..	396	348	202
22nd—28th ...	361	310	207
Weekly } Average, 1838 }	466	352	192

Estimated Population, 1840.	March 1st—7th	8th—14th	15th—21st	22nd—28th	Weekly Average, 1838.
West Districts, 308,920	135	155	140	151	156
North Districts, 414,458	179	162	185	173	172
Central Districts, 369,722	210	175	175	180	208
East Districts, 411,635	205	202	194	169	239
South Districts, 450,265	240	214	252	208	238
1,955,000	969	908	946	881	1013

TESTIMONIAL TO SIR BENJAMIN BRODIE.

A MEETING was held at St. George's Hospital on the 2d inst., for the purpose of considering what testimony of respect it would be proper to pay to Sir Benjamin Brodie on his retirement. Mr. Fuller took the chair, and the meeting was numerously attended. Dr. Chambers, Sir Charles Clark, and many other distinguished members of the profession, were present. We have not heard the nature of the testimonial which it is proposed to offer on this occasion.

CUBA HONEY AND WAX.

AMONG the insect tribe, the bee furnishes two important articles of export, in its wax and its honey. In the higher grounds, and the cultivated regions of the island, the honey is of a delicious quality; but in many of the lower districts, especially near the coast, where there are shrubs and plants of a poisonous nature, the honey becomes also pernicious from the bees having fed on their flowers. The inhabitants, nevertheless, persist in making use of it for sweetening their coffee, at the expense of nausea and headache to those who have not been accustomed to its use. The negroes eat it in abundance; and, in some places, the dogs are said to feed on it exclusively. There is another sort, supposed to be indigenous, called the *abeja criolla*, much lighter in the colour, and with a sting so short, that it scarcely makes itself felt. It builds its hive in hollow trees in the interior of forests or in clefts of the rock. Its wax is of a dark colour, but of balsamic quality, and considered useful in healing wounds and reducing tumors, particularly such as have become callous; that which is obtained from the interior part of the hive being preferred, from its being of a more powerful aroma. The honey is also darker in quality than that produced by the common bee; but its flavour, though strong, is agreeable. It often requires great courage to climb to the places in the rocks where their hives are formed; but the natives of the country are accustomed to it, and pursue it with all the ardour of a field sport. In those districts where this dark-coloured wax is produced, it is made into candles for the use of the neighbourhood, without being bleached.—*Cuba: with notices of Porto Rico, and the Slave Trade. By David Turnbull, Esq.*

YELLOW LIQUOR AMNII.

DR. PURDON, in a paper read before the Dublin Obstetrical Society, mentioned a case, in which, on rupture of the membranes in a woman affected with jaundice, the liquor amnii exhibited a deep yellow colour.—*Dublin Journal.*

PORTRAIT OF DR. CHAMBERS.

ON the retirement of Dr. Chambers from St. George's Hospital, a committee was formed by his pupils for the purpose of offering him some tribute of respect. It was decided to have a portrait, by Phillips, (three-fourths length), to correspond to that of Mr. Hunter, and to be placed in the Board-room of the Hospital.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, March 26.

James Remington Stedman, Guildford, Surry.—John Grove.—William Short, York.—H. T. W. Harper, East Indies.—E. B. Thring, Warminster.—J. M. Turnbull.—T. L. Hill, Birmingham.—S. M. Turner, Newcastle, Staffordshire.—W. T. Rogers, R.N.—Walter Hugo, Crediton, Devon.—T. S. Upton.

WEEKLY ACCOUNT OF BURIALS.

From BILLS of MORTALITY, April 7, 1840.

Abscess	1	Hooping Cough	3
Age and Debility	36	Inflammation	9
Apoplexy	3	Bowels & Stomach	6
Asthma	8	Brain	3
Consumption	42	Lungs and Pleura	12
Convulsions	19	Liver, diseased	1
Croup	1	Measles	3
Dentition	7	Mortification	1
Dropsy	4	Paralysis	4
Dropsy in the Brain	3	Small-pox	6
Epilepsy	1	Thrush	1
Erysipelas	2	Tumor	1
Fever	8	Unknown Causes	74
Fever, Scarlet	7		
Heart, diseased	2	Casualties	11

Increase of Burials, as compared with the preceding week } 24

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N. Longitude 0° 3' 51" W. of Greenwich.

March.	THERMOMETER		BAROMETER.	
Thursday . . 26	from	21 to 39	30.22 to 30.14	
Friday . . . 27		29 43	30.07 30.04	
Saturday . . 28		33 41	30.04 29.90	
Sunday . . . 29		35 51	29.74 29.72	
Monday . . . 30		30 52	29.79 29.84	
Tuesday . . 31		43 49	29.76 29.75	
April.				
Wednesday 1		40 49	29.63 29.57	

Wind N. on the 26th; N.E. on the 27th; W. on the 28th and 29th; S.W. on the 30th and two following days.

Except the afternoons of the 26th and 29th, cloudy. Snow and hail fell on the 26th and following day; rain on the 31st ult. and 1st inst.

Rain fallen, 1.455 of an inch.

CHARLES HENRY ADAMS.

NOTICE.

Mr. Brush's note reached us too late to comply with his request.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, APRIL 17, 1840.

LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.
Surgeon to the St. Marylebone Infirmary.

DISEASES OF ARTERIES.

ANEURISM—*continued.*—*Prognosis*—*Treatment by Valsalva's Method*—*by Cold*—*by Compression*—*by Ligature at the Sac*—*above the Sac.* *Consequences of the Ligature*—*Hæmorrhage*—*Enlargement of Tumor, Gangrene*—*Torsion, Mucure, &c.*—*Ligature beyond the Sac*—*Agents acting upon the Sac*—*Results of different Methods.*—**TRAUMATIC ANEURISM**—*Symptoms, Prognosis, Treatment.*—**VARICOSE ANEURISM**—*Symptoms, Treatment.*

Prognosis.—The prognosis in aneurism is influenced by many circumstances; generally it is a very serious disease; abandoned to itself, the sac may rupture, and death may follow; still, spontaneous cures do occasionally happen, but it is an event which cannot be calculated upon in a particular case. The tumor may inflame, ulcerate, and, instead of yielding blood, may give out pus, and a radical cure may follow. It may mortify, the mortification extending to the whole sac, and thus be cured. Again, tumors presenting all the characters of aneurism may disappear under compression. Generally speaking, every aneurism seated so near the trunk as to prevent the application of the ligature, or compression above it, is absolutely incurable. Still, every aneurism situated thus near to the trunk is not absolutely fatal; the injured point of the artery usually corresponds more or less exactly to the centre of the tumor; therefore, in certain cases, where the ordinary operation is

impracticable for want of space, it is possible to cut down upon that point, and apply ligatures. We must not, however, be understood to say that aneurisms are as much less serious as they are removed from the trunk; the situation of the anastomosing branches has much influence on the result. The cure of an aneurism, as a general rule, requires that the arterial trunk should be exposed; the deeper the trunk, and the more difficult to get at, the more is the danger. The cure of aneurism requiring the obliteration of the arterial trunk upon which it is seated, the circulation must be carried on through collateral channels; now, an aneurism, especially when the tumor is large, embarrasses the circulation through that artery, and the collateral channels are dilated; therefore it is that the chances of success from operation are greater when an aneurism has existed long enough, and has been large enough to prepare these vessels. Still, recent aneurism has its favourable circumstances; in such a case compression may be tried; in a large tumor it should not.

In fact, the prognosis of aneurism is more or less favourable, *cæteris paribus*, according to the age, the temperament, and the present bodily health of the patient; these circumstances must never be lost sight of, because they may have great influence upon the result of the operation necessary for the cure of the disease.

Treatment.—That aneurism spontaneously produced, may be spontaneously cured, has been abundantly shewn. For many years it was believed that it might happen without obliteration of the artery, but subsequent experience has shewn, that whether artificially or naturally cured, the cases are rare in which the permeability of the artery remains. This belief no doubt arose out of a conviction which long existed, that the obliteration of a principal artery caused gangrene of the limb, and the non-occurrence of this accident in many cases where aneurism had been cured,

could only be explained by assuming that though the aneurism was cured, the obliteration of the artery was a consequence. At present we know that to cure an aneurism we must obliterate the artery, and, therefore, our means must be directed to accomplish this object.

Valsalva's name is associated with a mode of treatment long and extensively employed; it comprised those means best calculated to lessen the energy of the heart's action, to diminish the quantity of blood circulating, and to favour coagulation in the sac. For this, very rigid diet, a very small quantity of fluids, absolute rest, were essential; with these were associated laxatives, digitalis, and frequent small bleedings. Many cases are recorded, in which the further progress of internal aneurism has been arrested under this treatment; but in how many has it utterly failed! It may be carried so far indeed as to lessen the chances of cure, by lessening the plasticity of the blood, and increasing the general irritability; but in internal aneurism we have no mode of treatment which promises better. Lately, another means has been associated with these, the exhibition of the acetate of lead, which, it is said, increases the tendency of the blood to coagulate, and cases of cure are mentioned, but I have never used it myself, or seen it used by others; and, therefore, I can only say, that its power of restraining hemorrhage appears to depend upon some such power, and that it is worth a trial in cases internal aneurism.

Bartholin strongly advised the use of cold (whether in the form of ice, iced water, refrigerants, or other mode), applied directly to the tumor, but it was, and is, still used principally as an auxiliary to the preceding method. Cases are recorded in which it has been successfully employed, but again I say, where the ligature can be properly applied, we ought not to rely upon cold; it has produced gangrene, and other serious inconveniences.

In the present day, we do not follow the plan of Severinus in applying the actual cautery to the tumor.

Guattani extensively employed compression upon the tumor, and along the course of the artery above the aneurism; it has been also circularly applied. Guattani's method has all the advantages which can be derived from compression. Compresses are applied to the tumor and along the artery, and a bandage is firmly and equably applied to the whole limb; cold lotions are applied upon the apparatus, and other means, as in the Valsalva treatment, are associated with it. That this means of treatment has been often successful is perfectly true; but many patients cannot support it. The numbing sensation which it sometimes occasions is

very distressing to some persons. In the compression, as exercised by Guattani, there is another serious inconvenience; it diminishes the energy of the collateral circulation, or even prevents its development, and so prejudices the success of any operation. Although Guattani may have cured four out of twenty cases, its efficacy seems to me very doubtful. The bandage is apt to loosen, and its success is thus defeated. Methodically applied, it will fail in bad cases, and the ligature must be employed; for these reasons at present it is rarely used.

Vernet fancied that compression below the tumor would cause, as in the operation of Brasdor, a coagulation of blood in its sac. In this he was deceived, and the operation was soon abandoned.

The *ligature* has been employed in different ways in the treatment of aneurism: the aneurismal sac has been opened, and the open mouths of the artery have been tied; the ligature has been applied at a distance, between the tumor and the heart, without meddling with the tumor at all; it has been applied between the sac and the capillaries. The first plan of applying the ligature is almost completely abandoned in the present day: when used, the method of Gauntani has been followed. A tourniquet has been applied, or the operator has been satisfied to trust to the thumb of an assistant. The operator, satisfied that all pulsation in the tumor has ceased, incises the integument in the course of the artery; the incision extends a little beyond the limits of the tumor; he carefully dissects down upon the sac, and opens it in all its length; the coagula are then removed, and the arterial openings are sought for; a sound or probe may be passed into them, the artery raised, and a needle, carrying a thread, passed under it: it should not be placed too near the sac, for fear of including a diseased part; another ligature is placed below the sac, the wound is then sponged out, the ligatures brought to the angles, and the whole healed, if possible, by first intention. With respect to this operation, it is necessary to make a few remarks: if the artery above the tumor appear much diseased, a flat ligature should be used. Hæmorrhage is frequent, sometimes because the coats quickly give way under the ligature. Violent inflammation of the part often occurs. Indeed, if we refer to the cases on record, it will be seen that the operation is often difficult and painful, that bad consequences frequently follow it, and that these disadvantages are not compensated for by any advantage; and it is abundantly proved that the ligature above the tumor is a much more successful mode of treating aneurism than by opening the sac.

The operation of *tying the artery above the sac*, when practicable, is the treatment almost always employed in the present day for the cure of aneurism, the sac being left entire. Guillemeau, it is believed by some persons, operated in this way; but this is an incorrect opinion: he followed the method of *Ætius* and *Philagrius*. The course of the artery was marked out; it was cut down upon, tied with two ligatures, and the artery divided between them. All fear of hæmorrhage being thus removed, the sac was opened, and, its contents being turned out, two ligatures were placed upon the openings into the sac (Guillemeau, *Œuvres de Chir.* chap. 6, p. 698). The principle of the present operation was unquestionably acted upon by *Anel* in a case of aneurism at the bend of the arm, (*Suite de la Nouvelle Méthode de Guérir la Fist. Lac.* Turin 1714, 8vo. p. 255.) We cannot say that he was aware of the many advantages of this method. He tied the artery, it is true, near the aneurism; and he left no precept on the subject: however, as in that case, it was not necessary to tie the artery at a greater distance from the tumor, we cannot say that in a different case, a popliteal aneurism for instance, he would not have proceeded to the middle of the thigh. The glory of applying this principle, and demonstrating its excellence, certainly rests with *John Hunter*. *Desault*, in the month of June, 1785, tied the popliteal artery *immediately above the tumor* for aneurism *in the ham, without opening the sac*: the nineteenth day a great quantity of sanious and grumous matter escaped from the wound. In December, of the same year, *Hunter* performed his operation, placing the ligature far away from the sac before the artery passed into the adductor canal; and unquestionably this is the great—the important, principle of success in the treatment by ligature. *Desault's* object in placing the ligature so near the tumor was, no doubt, to preserve as many collateral vessels as was practicable; but, then, at what a cost was this problematical advantage gained! The operation was difficult, from the depth of the artery and the contiguity of the sac; the ligature was likely to be, and really was, placed upon a diseased point of the artery; the tumor was near enough to become inflamed under the irritation, and this actually happened. *Hunter* passed under the artery four ligatures, a little removed from each other, and tied them at different degrees of tightness, so that the ligature nearest the tumor was the only one which totally intercepted the passage of the blood, the others merely moderating the current; the three extra ligatures he afterwards abandoned as useless, if not injurious.

Though French surgeons seek to detract from *Hunter*, by assuming that *MM. Anel*

and *Desault*, *Leberus* and *Van Hespel*, had already employed this method, no reasonable person will refuse to admit, that to *Hunter* alone must be accorded the merit of having established, upon sound principles, the success of the operation. With him success was no matter of doubt. He knew how serious, how doubtful, was the operation of opening the sac; he knew how great was the risk of finding a diseased artery near the tumor, whilst it might be comparatively healthy at a distance; he knew the power of the absorbents to remove the contents of the sac. The operation of *Anel* had not been followed; it had been condemned by *Molinelli*, *Verbrugge*, and others. Had not *Hunter* directed his mind to the subject, it is extremely probable that a similar fate would have attended that of *Desault*. To *Hunter*, therefore, must in fairness be conceded all the honour of the operation of tying the artery above the sac.

In performing this operation certain rules must be attended to. You cannot always place the ligature at the same distance from the sac; but it is wise to be as far removed from it as is practicable, that there may be more chance of finding it healthy: and it is also desirable to expose the artery where it is superficial, as the operation is thereby facilitated. We must also be guided to some extent by the going off of collateral branches, as the maintenance of the circulation in the lower part of the limb will, to a certain extent, depend on this.

The following are the results of the ligature placed above the sac:—Usually pulsation ceases as soon as the ligature is tightened; sometimes it continues, but is more feeble; in other cases it is renewed after a few days, lasts for a few days more, and then ceases. When the pulsation continues, it is evidence that the collateral channels bring the blood into the artery before it reaches the sac, or very soon afterwards, as in fig. 1, which was a popliteal aneurism; sometimes, even when the pulsations continue, if feeble, the case does well.

When the case does well the tumor diminishes in bulk, and becomes harder; if pain existed, it gradually disappears, and a hard nucleus is all that remains. Immediately after the ligature is tied the temperature of the limb begins to decline; but, in other cases, some time afterwards the temperature is raised, and this is always a good sign; it shows that the capillary circulation is active. As the arteries dilate this symptom is gradually dissipated. In some cases the diminished temperature continues for many days, the limb remaining numb, almost insensible, and decoloured; then we have fear that the circulation will not be re-established, and that mortification will set in. The general symptoms

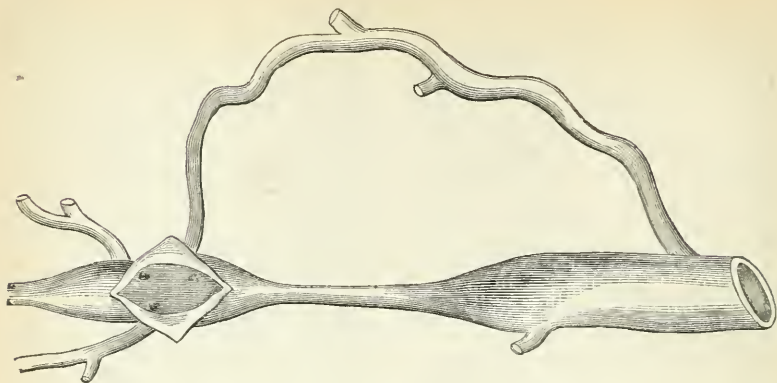


FIG. 1.

which follow the operation upon a large artery near the trunk are very variable; sometimes seeming to depend upon the sudden change brought about in the circulation, sometimes produced by spasm. The hardness and frequency of the pulse, heat of skin, suffused countenance, headache, vertigo and oppression, agitation and delirium, belong to the first cause; paleness, trembling, small pulse, rigors, hiccup, nausea, subsultus, and syncope, to the second.

The accidents which may follow the operation are, *secondary hæmorrhage, increase of size of the tumor, and rupture, gangrene of the tumor, and gangrene of the limb.*

After this operation the dressing should be simple. The limb should be so placed as to relax slightly the artery; it should be surrounded with flannel bags, containing warm salt, but they should not be too heavy, and the limb should be placed so that the heel shall be the highest point; this will facilitate the return of blood. It may be still further assisted by gently passing the hand equably up the limb, so as to give the subcutaneous veins mechanical assistance to expel their contents.

Consequences.—For some time the patient should not make much use of the affected limb, for hæmorrhage has in more than one case been the consequence of this indiscretion.

Hæmorrhage.—Taking 201 cases, in which the artery was tied above the tumor, I find hæmorrhage to have occurred in 34, or 1 in 6—happening, usually, from the sixth to the twenty-fourth day: at the earliest, it has happened on the first day; at latest, on the sixtieth: the total loss amounted to 46, or 1 in 4. If the hæmorrhage occur from that portion of the artery which is continuous with the sac, strong pulsation in the artery or the tumor often precedes it. It may be suspended by making pressure between the wound and the tumor, and there may not be room for the application of a ligature at the point; plugging

is then the only resource. The difficulty might arise in inguinal aneurism.

Increase of tumor.—In a small number of cases, spite of the ligature, the tumor will continue to enlarge. It may happen from the ligature being insufficiently tightened; from removing it too soon; from including some of the adjoining soft parts in the ligature; but generally from a collateral vessel communicating in the immediate vicinity of the sac, as in the figure given above. In a given case it may be difficult to discover the cause. If we believe the ligature to be slack, it should be tied a little higher. If, says Hodgson, in a case of secondary aneurism, we can get rid of the pulsation by making pressure just above the tumor, the artery should be tied there. If we are unable to discover the cause, and if, in defiance of bleeding, cold, and compression, the tumor continues to enlarge, the sac should be opened as already described.

Gangrene.—Gangrene may seize the sac when a tumor is very large, or it may suppurate. These accidents may happen before the ligature comes away, or after. When the mortified sac is ruptured, and hæmorrhage comes on, recourse must at once be had to amputation, if the patient has strength to bear it. If there be no hæmorrhage, but, instead of it, a serous, putrid, or sloughing discharge, we must use proper means of treating this condition, which is usually followed by profuse suppuration, to sustain which the patient's strength must be kept up. When gangrene affects any portion of the limb beyond the tumor, amputation is our only resource, and we cannot always wait for a line of demarcation to impose a limitation to the extension of mortification.

Torsion, machure, &c.—Other means have been used for the purpose of obliterating the artery above the sac. The vessel has been exposed; a tenaculum or needle is passed under it; the needle is then twisted

as a rope is twisted with a stick, to tighten it, around a bale of goods—the number of revolutions to depend upon the size of the artery; the wound is then healed by first intention, no foreign body being left between its lips; and “the vessel as surely obliterated as if surrounded by a ligature,” and there is no fear of hæmorrhage. Thierry and Lieber propose this operation, which, curious enough, is in principle one of the earliest methods of treatment known, and we owe it to Rufus. It has been transmitted to us by Ætius in the following lines:—“*Si vas unde emanat sanguis profundum fuerit, ubi situm ejus et magnitudinem diligenter perspexeris, noverisque numquid vena sit an arteria, vas immissa volsella extendemus et moderate circumflectemus,*” &c. This text is copied by Galen, in speaking of torsion as a substitute for the ligature in the treatment of aneurism. All that need be said is, that if the vessel be healthy there is no fear from the ligature; if it be diseased, there is much danger of its fairly giving way under the twisting process. The artery is much exposed, separated from its connection, and in many situations the operation is impracticable.

Again, Mannoir and others have employed the “machure,” or cutting with a forceps, at several points, the internal and middle coats of an artery. The result of experiment shows, that this process will commonly obliterate arteries of middle size, but will often fail in large ones; and it appears to me to be open to the same objection as the last operation.

Pins and needles have been used for the same purpose, but the objections made to them, when speaking of hæmorrhage, apply with full force here. I make the same objection to the seton and galvanism, as applied to the canal of an artery; if you expose the artery and act upon it, you may obliterate it by either agent, but with less certainty than the ligature; if you do not expose it, there is no security that the agents are applied to it.

Ligature beyond the Sac.—When Vernet proposed the employment of compression beyond the sac, for the cure of aneurism, he clearly paved the way for the proposition of Brasdor, to place a ligature in the same situation, for the same purpose; but it does not appear that he did more than suggest its adoption. The failures in the cases of Deschamps and Sir Astley Cooper were not calculated to bring it into favour; so thought Allan Burns, who says, “that the operation is absurd in theory, and that the result has shewn it to be fatal in practice.” This conclusion was come to upon very insufficient data, and we are now, when there are on record fifteen cases in which the operation has been performed, in a much better condition to estimate its value.

The objections which have been made to it are, that there is danger of the tumor increasing rapidly after the operation: to this objection it may be answered that, on the contrary, the tumor has been diminished and shrivelled; that aneurismal arteries have been obliterated below the sac, while the tumor still continues to enlarge: this has not been found to occur unless a large collateral branch be given off immediately below the tumor, and thus maintained the circulation in it. Mr. Guthrie, with reference to this subject, mentions a case in which Warner amputated a limb; the principal artery, though terminating in a cul de sac, became aneurismatic, and was cured by ligature above; a second aneurism appeared above the ligature, again tied, again cured; a third tumor formed; a third time the artery was tied, and the aneurism cured. But this is a very exceptional case, and cannot serve for comparison. Again, it has been urged, that though it cannot be denied that the operation has in some cases succeeded, the result cannot be attributed to coagulation of the blood in the sac, or to its subsequent removal by absorption, but to inflammation and suppuration excited in the sac by the ligature. Now, even if the cure were procured in this way, it would not be a reason for the proscription of the operation; I can only look upon this operation as an exceptional one, to be performed only when it is impossible to apply a ligature between the tumor and the heart. In fact, besides the common carotid, and the external iliac, above the epigastric, where can it be applied with a chance of success? The operation has been performed with success in aneurism of the carotid, by Wardrop; with temporary success by Lambert; with complete success by Professor Bush; without success in another case by Wardrop; with partial success by Montgomery. In those cases no branches were given off between the tumor and the ligature; Dupuytren believed that it was desirable that a small branch should be given off to prevent the chance of the tumor bursting. Wardrop, though he believed that the most favourable condition was that in which no branch was given off between the tumor and the ligature, persuaded himself that the existence of even more than one did not necessarily prevent the success of the operation; he adopted the opinion of Home, and believed that to obtain the cure in aneurism it was sufficient to diminish the impulse of blood. In a case of aneurism of the femoral, just below Poupert's ligament, Deschamps tied the artery below the tumor: the tumor continued to enlarge, a new operation was required, the patient died. Sir A. Cooper, in a case of aneurism extending to the commencement of the common iliac,

tied the external iliac; the tumor burst into the peritoneal cavity. Mr. White tied the femoral below the tumor, in a case where there was a very large aneurism of its upper part; there was no change in the tumor, but the patient died of erysipelas. In the case of Mr. James, in which he tied the aorta, the ligature was first placed on the internal iliaes, below the point where the epigastric and circumflexa ilii were given off: these results are certainly not encouraging. The operation has been performed for the cure of aneurism of the innominate: the carotid was tied by Mott; at the end of a month the tumor had disappeared; the patient died of suffocation eight months after: the sac within the chest was still large, the subclavian was permeable. Mr. Key, under similar circumstances, tied the carotid: the patient died a few hours after. Mr. Evans tied the carotid, and after much peril for a year, during which abscesses formed, the patient recovered; but the evidence is yet wanting to prove that it was aneurism of the innominate. Mr. Wardrop, in a case in which he conceived the right carotid was obliterated, tied the subclavian beyond the scaleni muscles: at the end of thirteen months there was apparent cure; yet a new bilobed tumor was manifest at the base of the neck: the patient died two years after: the innominate sac was lessened in one direction, increased in another, and the carotid was permeable. A man had a tumor, apparently proceeding from the right subclavian: Dupuytren tied the axillary immediately below the clavicle: for some days the tumour diminished; on the eighth there was hæmorrhage from a small ulceration in the tied vessel, which caused death. Mr. Fearn had better success.

Although I am disposed to regard this as an exceptional operation, to be resorted to only when the artery cannot be tied between the tumor and the heart, yet I freely admit that there are situations where it should hold more prominent place; as an inguinal aneurism extending in the iliac fossa. We must choose between ligature above the tumor, with all its difficulty, and this operation: a similar question may arise where the subclavian is affected in its middle third.

Agents acting upon the Sac.—We have now to consider certain means, which I have recommended, for acting directly upon the aneurismal sac, without injuring to any extent the cutaneous integument. I found that objections, such as I have already stated, attached to the employment of needles, seton, or galvanism, in the course of an artery—the uncertainty of implicating the artery itself. I then employed these agents upon the sac itself, and satisfied myself that either of them, but particularly

the two last, were capable of causing inflammation of the sac, and coagulation of its contents, provided the sac were not too large and too near the heart. A case was described, a few months since, in the Philadelphia Journal, in which a sac was obliterated by the insertion of a single needle. A case occurred in the practice of Mr. Keate, in which galvanism was passed into the tumor from a dozen pair of plates, the current being directed along two needles (inserted into the sac) by Mr. Faraday. The case was one of enormous carotid aneurism: at the first application, the contents were fluid, but soon after a portion of the tumor became firm. A second time the galvanism was applied; the firmness increased, and the progress was satisfactory—the patient died suddenly from the bursting of an aortic tumor: but the examination satisfied Mr. Keate that the carotid tumor would in all probability have done well. This plan has a material advantage—it is attended with no risk, and if it fail any other agent may be used without prejudice.

Result of different methods.—Taking a very large number of cases collected from periodicals and from classical works on the subject, I find that the method of Valsalva was tried five times, of which four cases were successful, but the time occupied was very long; that the *refrigerant and styptic* plan was tried thirteen times; that it succeeded in seven, and that recourse was had to the ligature in four cases; that *compression* between the tumor and the heart was employed in thirteen cases; that in seven of them recourse was afterwards had to the ligature, that in five it succeeded; that in five cases *compression* was applied to the tumor, that it succeeded once, and failed four times; that *compression* upon the whole limb was applied in five cases, of which three followed bleeding; that in three cases it succeeded, that recourse was had to the ligature in the fourth, and that the fifth died; that the mode of compression is not indicated in eighteen cases, of which eight succeeded, and in the other ten recourse was had to the ligature; that in five cases *compression* was associated with refrigerants; in two it succeeded, in three the ligature was resorted to; that in 31 cases, the old operation of cutting down upon the sac and applying ligatures there, was employed, that it succeeded in 23 cases, and failed in 8; that the Hunterian operation was performed in 171 cases, that in 126 it succeeded, and failed in 45; that the operation of Brador has been performed fifteen times, and has succeeded in four. What has been the comparative success of torsion, refoulement, &c., I am at this moment unable to state.

Of these three great methods for ob-

taining the obliteration of an aneurismal artery, that which is *directed to the tumor alone* has, up to the present moment, been the least efficacious; that which is employed *above the tumor* is the most sure; some of the means included in that method have been employed only on brute animals, and are too inconvenient to be adopted in practice; such are the seton, acupuncture, refoulement, and internal plugs without ligature, and to these may be added machure, and in many cases torsion: that which is employed beyond the tumor, *the method of Brasdor*, is a resource to which we must not recur, unless the obliteration of the artery between the aneurism and the heart be impossible, and cold and compression have failed.

As to particular methods, there can be no doubt, that, in general, for the obliteration of the artery, compression is too painful and too uncertain; the simple ligature, or the double ligature with section of the artery between them, is very preferable; whether machure or torsion may ever rival them is at present improbable. If the artery be much diseased, the ligature cannot be applied, unless it be flat, or for the purpose of securing a bougie or other foreign substance within the arterial canal; the torsion not at all. What stand the operations I have advocated upon the sac may take, a long experience must decide.

TRAUMATIC ANEURISM.

Traumatic aneurism is a consequence of a wound inflicted upon an artery; the blood escapes into the surrounding tissue, where it is either circumscribed or diffused.

It is usually seen where the wound is small, deep, and irregular; the blood being unable to find its way out, infiltrates the tissues, or hollows out for itself a cavity; it may succeed to any other violence under which the arterial tunics give way, may succeed to the application of a ligature, which has ulcerated through the coats, before the artery is obliterated.

It is not always easy to distinguish this kind of aneurism; if it succeed to a wound made by a penetrating instrument, arterial blood at first escapes from the wound, or it may be at the same time a mixture of arterial and venous blood. Some movement changes the relation of the parts, or compression is made to prevent a further flow of blood, and then the blood passes freely into the adjoining cellular tissue, which it infiltrates to a greater or less distance. If it get to the subcutaneous cellular tissue, the skin presents a mottled appearance. This infiltration may very rapidly produce tumefaction, or it may proceed so gradually and insidiously as to lull suspicion for many days. When an artery or a large aneurismal tumor

has given way without external wound, the tumefaction may come on very quickly, and the pain may be very great; if we press strongly upon it, obscure pulsation is sometimes discovered, but usually all we discover is a thrill opposite the opening of the artery.

The distension consequent upon this kind of infiltration may be very great, the tissues may even be strangulated, the blood may break down and undergo putrid decomposition, under the influence of which suppurative or gangrenous inflammation may be developed. The limb becomes insensible, is covered with vesicles filled with fetid serum, and the patient dies either exhausted with hemorrhage or mortification. But, instead of that, the opening in the vessel may be blocked up, and the coagula may be absorbed. In some cases, instead of freely infiltrating surrounding tissues, those tissues are condensed around the extravasated blood, and constitute for it a sac or cyst communicating with the artery, and in many respects resembling the sac formed by the external tunic of the artery in what is termed true aneurism.

When we examine one of these circumscribed aneurisms, we usually find on one side of the tumor the cicatrix of the wound which penetrated to the artery; we see that the cyst is cellular, but generally thinner than in true aneurism. In its interior we find a single mass of coagulum and a small quantity of fluid blood, sometimes concentric layers of reddish fibrinous clots; the more dense externally, the more soft internally. When we remove the clots, we discover the opening in the artery sometimes oval, sometimes rounded; it is usually found on the side of the artery, corresponding with the wound of the integuments.

Prognosis.—Traumatic aneurism is as much more serious as the wounded artery is nearer the trunk, deep seated; that much blood is extravasated; and that it threatens decomposition. When it is circumscribed, *ceteris paribus*, it is a less serious disease than true aneurism; the tumor increases more slowly; it is more frequently cured by compression; and if operation be necessary, there is more chance of a healthy artery for the ligature: besides that, there is less chance of the development of the disease in another point. But when traumatic aneurism results from the wound of a large artery, it is a very serious disease; infiltration proceeds rapidly, and the distension is extreme. The danger is less when the artery is smaller; but even then, if it be deep, it is very serious. Generally, in these cases, the resources for carrying on the circulation after obliteration are lessened.

Treatment.—In many cases of traumatic aneurism, compression applied upon the

tumor will completely succeed. I have known three cases in which, in the act of bleeding, the artery was punctured at the bend of the arm, and all bad symptoms were prevented by graduated compression; but as a general rule, if the artery be deep seated, pressure upon the part cannot prudently be made. If the disease make no progress, it should be let alone. If the disease be not restrained by compression, or if it cannot be conveniently borne, then we must have recourse to the ligature: but an interesting question arises here—where is it to be placed? When the situation is favourable, many surgeons insist on the necessity of fairly exposing the wound of the artery, and applying ligatures above and below it. Guthrie strongly advocates this plan, even when the artery is deep-seated. Delpech objected to this course, and maintained that a ligature between the wound and the heart was the proper course to be followed; so did Dupuytren. The point has been much discussed, and the result seems to be, that in the first few days a single ligature will do, unless there be enormous anastomoses. When, on the contrary, a sac is fairly formed, and hæmorrhage has occurred from the wound several times, this method *may* succeed, but the chances of secondary hæmorrhage are increased. My own opinion is, that where the artery is superficial, and easily got at, the two ligatures ought to be applied; but where considerable difficulties are likely to be experienced in exposing the artery, it is wise to tie at a little distance from it; where most facilities will be afforded. There are many men who maintain that the chance of hæmorrhage from the furthest extremity of the artery is greatest. They, of course, condemn the Hunterian operation; but I still adhere to the opinion, that it is better to try the effect of tying at a distance than to cut down through a large bed of muscles—as in a large calf of the leg, to get at the posterior tibial; or the ulnar artery in the upper third of its course.

VARICOSE ANEURISM.

A varicose aneurism is a tumor produced by the passage of arterial blood into a vein: this may be a consequence of a wound, or disease. In 1757, Hunter described this disease. Guattani afterwards described it in a memoir, "*De spurio brachii aneurysmate.*" It is at the bend of the arm that we usually see this species of aneurism, and as a consequence of bleeding; the lancet passing through the median basilic vein into the artery which, in many cases, is immediately under it (see fig. 1). It may be produced elsewhere, has followed a sword wound and gun-shot in the ham, a puncture of an awl in the upper part of the thigh, and may, of

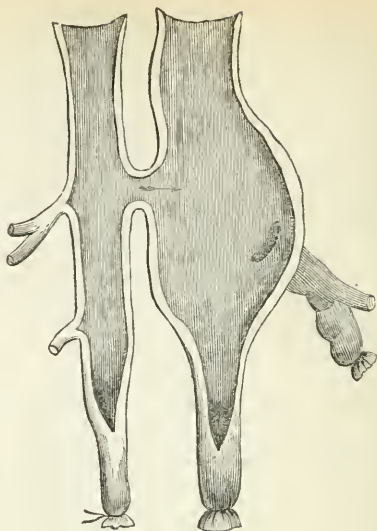


FIG. 2.

course, occur wherever an artery and vein are near each other. In all the cases which I know, except two, there was an external wound to explain how the communication between the two vessels had been established. One of these cases was observed by Professor Syme; the communication existed between the aorta and the inferior cava; the other occurred in the practice of Mr. Perry, at the St. Marylebone Infirmary; the communication was between the femoral artery and vein. In these two cases there was no external wound to account for the condition, and we must therefore assume that an abscess may have been developed in the cellular tissue between or in the coats of one of these vessels, and that by this means the communication was established with the other.

Symptoms.—However developed, an ovoid tumor is more or less rapidly developed in the course of the artery and vein; it pulsates, and the impulse is isochronous with the pulse. It is a more tremulous sensation than that observed in ordinary aneurismal tumors; the veins around are dilated. The tumor disappears more or less completely under pressure, or when we compress the artery above it, or if we press circularly above and below the tumor. When the disease has existed some time, and the tumor is large, the artery above the point becomes dilated, and sometimes flexuous. In the arm, the ordinary effects of this disease are to produce numbness below the tumor, a certain loss of muscular power, and some flying pains. It may remain long stationary: in Hunter's case, the man lived 35 years after the injury.

In the lower limbs the inconvenience is usually greater: besides pain, numbness, and muscular debility, there is a diminished temperature; and there may be great dilatation of the superficial veins, tumefaction, and often ulcers. All observers are agreed that the arterial blood passes into the vein. Breschet has endeavoured to prove that a certain quantity of venous blood passes into the artery: as proofs of this, he refers to the numbness, the sensation of cold, the loss of muscular power, and diminished sensibility; which he believes to be produced by the circulation of venous blood in the arterial system. He believes the introduction of venous blood to be intermittent; that during the systole of the artery, arterial blood passes into the vein, and that the venous blood passes into the artery during its period of dilatation. This, however, is doubtful.

Treatment.—Varicose aneurism may be cured by compression applied to the tumor; but it is a tedious, and often painful, mode of treatment, and should not be employed except in recent or superficial cases. If the disease appear stationary, we may adopt Clegborn's advice: recommend the patient to make little use of the affected limb, and carefully watch it. But it often happens that the inconvenience increases, and it may become so considerable as to require active treatment. Some surgeons attempted to cure the disease by tying the artery above the tumor, but they almost universally failed, as might have been expected, because there is no analogy between ordinary and varicose aneurism; and therefore the same treatment was not likely to succeed. When the artery is so tied, the collateral circulation soon brings the blood to the opening, and it passes into the vein. Guthrie has shewn the imprudence of employing this method. The only proper mode of treating this disease is, failing compression, to treat it as we should a wounded artery—cut down upon it, expose the wounded point, and tie the artery above and below it.

In a few words, I will seek to put you in possession of the distinctions which pathologists have pointed out in aneurism. I have avoided them till now: I feared they would serve to complicate the subject, and render it less intelligible. I believe that *true* aneurism, in which the whole of the arterial tunics are entire, is frequent; I believe that a *single* specimen exists of that species of aneurism, described by Haller as "*aneurysma herniam arteriæ sistens*:" it consists of a dilatation of the internal tunie, and of its passage through an opening in the middle tunie. The specimen to which I refer was presented to the Society of the Faculty of Medicine of Paris, by Dubois and Dupuy-

tren. I know that false aneurism, where one or more tunics have given way, is by far the more frequent; that traumatic aneurism is much less frequently seen—not much more frequently, indeed, than varicose aneurism. A distinction is made between varicose aneurism and aneurismal varix; the first being formed by the immediate passage of the blood out of the artery into a vein; whilst, in the second, the blood is at first effused into the cellular tissue, forms a sac, and afterwards penetrates into a vein, as in the diagram. But this is very unfrequent.



Again, you will see described *primitive false aneurism*, and *consecutive false aneurism*. In the first, the blood passes at once into the cellular tissue, which it infiltrates; in the second, a clot fills up the opening into the artery, and prevents the blood from passing out: ultimately the plug may give way, and a certain quantity of blood passes out, and a cyst is formed around it. These distinctions are of a certain value in practice, but that value has been already indicated.

BETHLEM HOSPITAL.

Report of the Commissioners concerning Charities.

REPORT BY MR. MARTIN.

THE House of Bethlem was originally founded as a convent by Simon Fitzmary, a citizen of London, who, by deed-poll, dated in the year 1247, granted unto the church of St. Mary of Bethlem all his land in the parish of St. Botolph Without Bishopsgate, to be held in frankalmoin for the foundation of a priory; the prior, canons, brethren, and also sisters of which were to profess the rule and order of the church of Bethlem, bearing the sign of a star publicly in their caps and mantles.

No satisfactory information has been obtained respecting the manner or period of the conversion of the convent into a hospital; but Stow states that it was said that a king of England caused a number of distraught and lunatic people, who before were maintained in a house near the parish church of St. Martin in the Fields, not liking such a kind of people to remain so near his palace, to be removed farther off to Bethlem Without Bishopsgate. In the year 1330, the house had acquired the name of "a Hospital," and is so described in a license granted by Edward III. to the master and brethren to

collect alms; and in the Harleian MS. there is a copy of a letter of the same date from the Archbishop of Canterbury, granting indulgence, to all who had contributed to the support of the Hospital of Bethlem.

In 1346, an application was made by the master and brethren, to the mayor, aldermen, and citizens of London, to be received under their protection. It was proposed that the house should be governed by two aldermen, one named annually by the mayor and aldermen, the other by the master and brethren; and to this assent was given. From this document it may be collected that the monastery fell into decay shortly after its foundation, and that the brethren of the house were dispersed abroad in the collection of alms.

By an ancient entry in the muniment-book of the hospital, it appears that, in 1375, it was seized into the hands of the crown as an alien priory; and it was certified that it was of the foundation of the City of London, and was worth, by the year, six mares. During the reign of Richard II., the right of presentation to the mastership of the hospital became a matter of dispute between the citizens and the crown, and, in 1389, the question appears to have been referred to Chancery. At this time the hospital still retained the character of a religious house; for the Lord Bassett, in one will, gave 200*l.* for the foundation of four chantries, two of which were to be at Bethlem, and, in another, gave to "the Hospital of our Lady of Bethlem Without Bishopsgate," 200 mares.

The earliest mention that has been found of the reception of lunatics in Bethlem is in a visitation of the hospital, made by virtue of a royal commission in the 4th year of Henry IV. The record of the commissioners states that, of the master, brethren, and others of the original foundation, there was now only a master, who did not wear the "prescribed dress;" and it also mentions that there were then in the house six men deprived of reason, and three other sick: it mentions also six chains with their appurtenances, with locks and keys, and four pairs of manacles of iron, and five other chains of iron, and two pairs of stocks.

In the year 1546, the hospital was bought by the citizens for the sum of 113*l.* 6*s.* 8*d.*, and, after remaining in the charge of the chamberlain and others for some years, it was placed, in 1555, under the care of the governors of Christ's Hospital. In 1557, at a general court of the governors of all the Royal Hospitals, Bethlem was placed under the management of the governors of Bridewell; and the union still subsists, having been confirmed by the Act 22 George III. c. 77, by which the present constitution of the Royal Hospitals was sanctioned and established.

The present government of the two hospitals is vested in a president and a treasurer, the court of aldermen, twelve common councilmen, elected in the same manner as the similar governors of St. Bartholomew's and St. Thomas's Hospitals, and an unlimited number of nomination governors, who are eligible on the payment of 100*l.*, or, if nominated by a steward of the annual dinner, 50*l.* The president has also the right to nominate two governors annually; and the treasurer one annually, who then become governors without ballot or benefaction. The present number of governors is 343.

In the year 1555, the possessions of the hospital amounted to 43*l.* 8*s.* 4*d.* yearly. In 1632, its estates would, if out of lease, have produced about 470*l.* per annum. For many years after this period its resources were inadequate to the maintenance of the patients; and it is mentioned that, in 1642, the Easter preachers at the Spittle were requested to plead its necessities. Forty-four lunatics, at least, were at this time continually kept with food and physic.

The present possessions of the hospital consist chiefly of houses in and near Liverpool-street, which formed part of the property of the original grant from Simon Fitzmary, and are now worth upwards of 1200*l.* a year; houses in and about Piccadilly, obtained by exchange with the crown for houses required to be pulled down for the improvements at Charing Cross; houses in various other parts of the city; an estate at and about Wainfleet, in Lincolnshire, and upwards of 100,000*l.* stock. The gross annual income, taken on an average of ten years, ending Christmas, 1836, was as follows:—

Curable Fund.

Rents and annuities	£5881	5	1
Dividends	2834	7	2
Legacies and benefactions	405	15	9
Payments on account of patients	144	18	6
		9266	6 6

Incurable Fund.

Rents, annuities, and dividends	£5688	9	7
Legacies and benefactions	28	18	11
Payments on account of patients	1279	19	8
		6997	8 2
		£16,263	14 6

In 1642, it appears that the house could not maintain more than fifty or sixty patients, and these with but poor accommodation. In 1676 it was rebuilt, after the great fire, and was made large enough to contain upwards of 120 patients, and two wings were added to it in 1733, for the reception of incurable patients; it was also further enlarged in 1793. But from having been constructed in great haste, it was found that in 1799 all the buildings of the Old Bethlem Hospital were in a very bad condition, and in 1807 it was determined to effect an exchange of property with the corporation, for eleven acres of land in St. George's Fields, on part of which the present hospital, which was to be large enough to contain 200 patients, now stands. An Act of Parliament was obtained, in 1810, for erecting the said hospital, and upwards of 122,000*l.* being obtained from various sources, including upwards of 70,000*l.* granted by parliament, 3000*l.* from the corporation, and upwards of 23,000*l.* from the hospital funds, the building was completed in 1815.

Former treatment of the patients.—It seems probable, that from the first reception of lunatics into Bethlem, their condition and treatment were wretched in the extreme. The iron chains, with locks and keys, mentioned in 1403, and the manacles and stocks then spoken of, indicate but too plainly the system then pursued. In 1598, a committee, deputed to view the house, reported that it was so loathsome, and so filthily kept, that it was not fit for any man to enter. It contained no more than twenty inmates, who were termed prisoners; and of these, six only were maintained at the expense of the charity.

Stow, however, says, that in his time there was "undoubtedly the greatest provision made for the patients of any public charity in the world; each having a convenient room and apartment for themselves, where they are locked up on nights, and in it a place for a bed, or if they are so senseless as not fit to make use of one, they are every day provided with fresh and clean straw." And after mentioning other advantages of airing, bathing, and excellence of diet, he speaks of the care that was taken of their other illnesses besides lunacy, and marvellous cures of many fearful diseases; and concludes, "so that by God's blessing, for twenty years past, ending 1703, there have been above two patients in three cured, as the physician hath told me." The number of patients at this time was seldom less than 136; and the hospital was with these always crowded and full.

Amongst the conflicting accounts which are next given in the report, from the evidence taken before the House of Com-

mons in 1815, and from the reports of the Committee of Management, it might be difficult to determine whether up to that time any change in the management of the patients had been made in the direction of improvement. The degree of restraint to which many of them were subjected, was clearly in many cases unnecessary, and in all unjustifiably severe. In 1816, in consequence of the strict investigations that were then just completed, the physician and the apothecary were not as usual re-elected; and it was resolved that no patient should be kept in constant restraint for more than eight days, without a consultation of physicians on his case, and their sanction in writing for the continuance of such treatment.

Present management of the hospital.—The patients are of two classes; those admitted for cure, and those who have been discharged as incurable, and are afterwards received on the incurable foundation. Inadmissible cases are those of lunatics who are possessed of property sufficient for their decent support in a private asylum. 2. Those who have been insane for more than twelve months*. 3. Those who have been discharged from any other similar hospital. 4. Female lunatics who are with child. 5. Lunatics in a state of idiocy, or afflicted with palsy, epilepsy, or convulsive fits. 6. Lunatics having syphilis or the itch. 7. Those who are blind, or so weakened by age as to require the attendance of a nurse, or to threaten the speedy dissolution of life, or who are so lame as to require the assistance of a crutch or a wooden leg.

All who are not thus disqualified are admitted at all seasons of the year, and provided with every thing necessary for their complete recovery, if the same can be effected within twelve months. They are admitted on the presentation of a petition, signed by some near relation or friend of the lunatic, together with a certificate of its truth, signed by the minister and parish officers of his parish, and a certificate of lunacy signed by the medical attendant. The petitions are considered by the governors on the Friday following their presentation, and, if judged a fair subject for admission, the patient is desired to be brought for examination by the physicians of the hospital, at 10 A.M. on the following Friday. In cases of urgent recent insanity, admission is given on the first Friday, and extraordinary cases are received at any time, by order of the committee, president, or treasurer. Before a lunatic can be admitted, two respectable housekeepers must attend at the hospital, and enter into a bond of 100*l.* to take him or

* This restriction is not acted upon when there is a fair prospect of cure.

her away whenever the committee shall think proper to direct, and to pay the expense of burial if the patient die in the hospital.

The patient being brought to the hospital at the time appointed, is examined by the physician in attendance, and the particulars of his case are taken down in writing, and a report made to the sub-committee, who at once send those who are deemed fit objects to the galleries. In 1836, 311 petitions were presented; of which 273 were approved, 28 postponed, 8 rejected; of the 273 whose petitions were approved, 253 were admitted after examination; the rest being found idiotic, or paralytic, or otherwise disqualified.

The curable patients are distributed in three classes: the basement gallery is expressly for the furious and mischievous, and those who have no regard to cleanliness; the first floor is intended for ordinary patients on their admission, and for those who are promoted from the basement; the second floor is for patients who are most advanced towards recovery; the remaining galleries are appropriated to incurables. Patients, however, are often for various reasons changed from one gallery to another.

The apothecary resides in the house, and visits the galleries daily. The physicians attend, one on Wednesdays and Saturdays, at one; the other on Mondays and Thursdays at ten, and at other times when their advice and assistance are required. The patients are nearly equally divided between the two. All the curable patients, and the criminals, and in general the incurables, are seen by their physicians at least twice in each week. Aperient medicine (cal. gr. iij. rhubarb, gr. xvii.) is usually given on admission, unless contrary directions are received from the physician.

The patients of both sexes who are capable of employment are set to work as soon as possible about the ordinary business of the house, in assisting the nurses and keepers in making the beds, washing and cleaning. The men pump all the water required for the use of the house, and some employ themselves in knitting, tailoring, and mending clothes. The females also, who are capable, are employed in the laundry, and in making up linen for the use of the hospital, and they do the ordinary needle-work for the hospital.

In the airing ground, some of the men play at ball, leap-frog, and other games; they also amuse themselves with cards and dominoes: and the women are encouraged to dance in the evenings: no regular handicraft occupations have been introduced.

Books also have been provided (in all 62 volumes), with the sanction of the physicians and chaplain. The females formerly

had a barrel-organ, but it has long been out of order; it is thought that music might be introduced into the house with advantage.

The following hours are observed throughout the house: the patients rise in summer at 6, and in winter at 7; breakfast at 8; dinner at 1; tea at 5; ordinary bed-time at 8. When the patients retire to bed, they are locked into their rooms, and the clothes of all of them are in general removed; when this is concluded each keeper on the men's side makes a personal report of it to the steward, stating the condition of the patients under his care.*

Every possible endeavour is made to dispense with personal coercion: the rules of the hospital forbid the restraint or confinement of any patient without the sanction of the physician or apothecary, leaving, however, a discretion to the matron, on condition that she report each case of restraint and of release from coercion to the apothecary. In practice, however, the keepers and nurses frequently coerce patients when they consider it necessary for their own safety, and that of the other lunatics, but the matter is instantly reported to the proper officer. Every case of restraint, however trifling, is required to be noted down and returned in each week to the committee. Chairs, to which proper conveniences are affixed, are occasionally used in the female side, the sides and backs being stuffed to prevent the patients from injuring themselves, and a moveable board or table placed in front, is locked on to the frame: violent patients are sometimes confined to their beds by iron chains, and rings affixed to the wall. The number of these cases is very small; none are reported in 1836, except among the criminals: during that year, 53 patients altogether were subjected to restraint; and of these, 25 were reported only once, and 16 twice. The most usual means employed are the belt and gloves, or the belt and wrist locks, on one or both hands; restraint is never used till the patients are actually violent, unless when suicide is feared. The keepers have often been seriously injured; but the matron, in the course of her duty during twenty years, has never received the slightest violence, nor even been threatened with a blow.

Those patients who are capable are required to wash and comb themselves daily, and the others are washed and combed by their attendants; the dirty patients are cleaned whenever occasion requires it: men are shaved twice a week by the keepers. Those patients whom it is

* A part of the management of the patients is illustrated by references to the plans of the buildings. Without the engravings of these, this portion could not be intelligible, and being by no means highly important it is here omitted.

necessary to confine to their rooms, are shifted every two or three days to a different room, in order that every article of furniture about them may be thoroughly purified, and the room whitewashed. Much attention is paid to the apparel of the patients, particularly with a view to the warmth of the extremities: the clothing not being supplied by the charity, all articles furnished from the hospital stores are repaid by the patients' sureties. The sums charged by the hospital for the clothing of curable patients during eight years, have amounted on an average to less than £1. per annum for each person.

The bedding is furnished by the hospital: the violent and raving mad patients do not use sheets, but lie between blankets upon loose straw, which is shifted daily; the destruction of blankets is exceedingly great.

The patients who are thought by the physician to be sufficiently composed, are permitted to attend chapel, where an abridged service is performed on Sundays, and a short address adapted to their condition is delivered by the chaplain: permission to attend is much prized, and is attended with a very beneficial operation, and is considered as a step towards convalescence; the indiscriminate use of bibles and prayer-books is not allowed. The chaplain visits the patients in the galleries who require his attendance, under the sanction of the physicians. Roman Catholic priests also are admitted in the same way, to all who seek their assistance; but persons who profess wild or fanatic doctrines would not be permitted to enter: prayers are read in the chapel on Tuesdays and Thursdays; but the attendance is much smaller than on Sundays.

The friends of patients are admitted to see them on the first and third Mondays of the month, subject, however, to the approbation of the medical officer; they are required to write their names and address in the porter's book in the hall: the average number thus admitted is thirty-nine each time: they are as far as possible prevented from bringing anything deleterious. All letters written to patients are read by the matron, or the steward, or apothecary, and if necessary, withheld for a time: letters also are not sent from patients without sanction.

The patients are in general healthy in body. Typhus fever is of very rare occurrence, and no case of cholera occurred during its prevalence in London, great precautions having been taken to prevent it: a change was made in the diet of the patients, meat being served to them daily, and rice substituted for the ordinary vegetables. In 1836-7, the house was severely visited by the influenza; and almost every patient who died before June, 1837, was

found, on examination, to be diseased in the lungs. The post mortem examinations are made by the surgeon, and all the particulars are recorded in his case-book.

Patients, whose cure is effected within the year, attend to return thanks to the governors, or are not afterwards again admissible: those whose cure is not so soon completed are permitted to remain, if there be hope of ultimate recovery; if there be no such hope, they are brought before the committee, and discharged as uncured. A report is made by the physician of such among them as are fit to be received in the incurable foundation; and, if thought proper objects, their names are placed upon a list kept for that purpose, and notice given to the friends of each patient, in regular rotation, as vacancies occur. Persons whose disorder consists of mere incompetency, and who are neither violent nor dangerous, are not considered fit objects for this branch of the charity; and the blind, lame, and epileptic, are also excluded. The incurable list is at present restricted to 25 men, and 10 women. They are not entirely maintained at the expense of the charity, a small weekly charge being made for their maintenance.

The criminal lunatics are treated in precisely the same manner as the others. Some few of them are occasionally cured.

Taking the average of the ten years from 1827 to 1836 inclusive, the numbers of patients, both male and female, and the terminations of their cases, are as follows:—

CURABLES.

On the books, January 1st	114
Admitted in the year	203
Total number on the list for the year	317
Discharged cured.....	104
Out on leave, (average of four years),	19
Discharged, as being improper objects	30
Discharged, at request of friends.....	3
Discharged uncured... ..	50
Deaths	9.5
Number discharged cured, out of each hundred admitted	51*

INCURABLES.

Remaining in the house, Jan. 1st.....	64
Admitted in the year... ..	5
Discharged cured in ten years.....	6
Died, average	2.9
Mean duration of stay of each incurable patient, 12 years and 210 days.	

CRIMINAL LUNATICS.

Remaining in the house, Jan. 1st....	57
Admitted in the year.....	2.7
Cured.....	1.6
Escaped, two in ten years.	
Died.....	1.6

* If the cases stated to be out on leave in the returns of four years, be included among the cures, as they are in the other years, the proportion of cures to admissions will be, on an average of ten years, 55 per cent.

The total average expense per annum of a curable patient to the charity, in 1836, was.....£41 5 4
 Ditto, ditto, to his friends..... 0 14 11

Total average expense per ann. £42 0 3

Average expense of an incurable patient to the charity in the same year...£21 0 10
 To his friends 20 19 6

Total..... £42 0 4

Average cost, per annum, of a criminal lunatic, about.....£36 0 0

Average payment, per annum, for each to the hospital..... 45 0 0

Average gain to the hospital....£9 0 0

The following table of the patients in the hospital in 1836, may probably be taken as an average:—

Admitted.	Duration of Insanity previous to admission.	Cured.
1	Not exceeding 18 months.	
2	12 "	
8	" " 10 "	1
1	" " 9 "	1
7	" " 8 "	1
9	" " 7 "	1
14	" " 6 "	2
7	" " 5 "	1
14	" " 4 "	8
28	" " 3 "	18
37	" " 2 "	17
3	" " 1½ "	6
5	" " 1¼ "	4
44	" " 1 "	29
24	" " ¾ "	15
39	" " ½ "	24
10	" " 1 "	6
253		134

The average duration of insanity in the patients who were discharged cured was 56 days.

An abstract of the physician's annual reports, from 1820 to 1836, shows, that there were admitted in that period:—

	Curables.	Incur.	Crim.
	3090	97	67
Of whom were discharged cured	1480	22	32
Uncured	829	3	2
By request of friends	75	23	0
Improper objects....	483	6	0
No reports received of	14	0	0
Escaped.....	0	0	3
Died	145	47	28

The causes of dismissal of patients as improper objects, for six years ending 1836, were,

Paralytic.....	87
Sick and weak	59
Idiotic.....	28
Epileptic.....	24
Apoplectic	4
Pregnant.....	3
Fits	2
Venereal.....	2
Aged and infirm....	1

210

The causes of death during the same six years were,—

Exhaustion....	23
Apoplexy	7
Epilepsy	6
Diarrhœa	6
Gradual decay	4
Bronchitis	3
Abscess of lungs	2
Hydrothorax	2
Suicide	2
Effusion of serum, syncope, consumption, chorea, peritonitis, debility, paralysis, and unknown cause, each one	8
	63

The report is concluded by drawing comparisons between several parts of the system of management of the patients in Bethlem, with that adopted at other lunatic asylums, and especially those of Hanwell, St. Luke's, Lincoln, Glasgow, Nottingham, and Wakefield; and in all cases to the disadvantage of Bethlem. It is submitted, that though to a casual visitor its perfect cleanliness, and the neatness of appearance and absence of all apparent restraint of the patients, might lead him to conclude that the management of lunatics has here attained perfection, yet there is still room for considerable improvement. Some of the defects in the present arrangement are, no doubt, to be attributed to the construction of the building, which appears to have been erected partly on the plan of the old hospital in Moorfields, with a view to the continuance of the coercive system there pursued, and is by no means well adapted to the present improved method of treatment. The aspect, it is said, is not good, the gallery windows facing to the north: the windows are too high from the floor, formerly more than six feet; the lower galleries ought not to be on a level with the earth, nor is there any necessity for stone floors in them. The centre of the building is obscured and made gloomy by a heavy useless portico, and the back is even more gloomy and repulsive than the front. The gloomy exterior of the hospital, and the heavy unsightly window-bars, savour strongly of the times of rigour and coercion; they are

compared with great disadvantage with those in the lunatic asylums at Lincoln and at Nottingham, which are like common windows to external appearance, but are secured from being opened more than a certain distance. It is considered as much to be regretted, that the governors should have consented to the erection of the wings for criminal patients, by which the patients were deprived of the space now devoted to the use of objects who could not have been in the contemplation of the citizens when the existing lease was granted. The criminals now enjoy a larger quantity of ground in proportion to their numbers than the ordinary patients. The whole of the land held by the hospital appears no more than sufficient for the wants of the patients, but a very small portion only is devoted to their use. The kitchen gardens and the two lawns might be at once used or made fit for use as airing grounds, and the present airing grounds, which are mere bare cheerless inclosures, might be planted and rendered far more agreeable than at present.

Within the house the most striking feature is the want of occupation for the men, the greater number of whom may be seen sauntering about the galleries in listless and hopeless indifference. Some, indeed, play in the airing grounds, and a few are occasionally employed in the lawns and gardens, or in knitting; but the only general occupation is that of pumping at the crank and capstan. At Wakefield, Nottingham, Hanwell, Glasgow, and many other places, on the contrary, the occupations are of the most varied kinds, and the patients are even taught trades with which they were before unacquainted, and are employed as blacksmiths, weavers, shoe-makers, carpenters, tailors, &c. The intellectual employment also of the patients at Bethlem appears capable of great improvement: only a very small portion of them occupy themselves in reading, and it was stated by the matron that the women do not in fact enjoy the use of the library. Personal restraint also, though so much less than formerly, is still considerably greater and more frequently employed than in many other asylums.

Other suggestions for improvement relate to the too great caution which is evidently displayed before the patients, in every thing around them being distinctly adapted to prevent them from harming themselves or others; the absence of any medical school or system of pupillage, by which medical science might be advanced, at the same time that it would (as it does in the general hospitals) afford a constant stimulus to the exertions of the medical officers; the propriety of having a resident

physician, with suitable assistants and a remunerating salary, or of making an increase in the number of physicians, and, perhaps, an addition of one or two ordinary practitioners to those who devote themselves chiefly to the cure of insanity; the necessity of a greater portion of statistical information being afforded by the annual reports; the propriety of relaxing some of the restrictions by which certain classes are at present disqualified from admission, as those against persons with venereal disease or itch; and the importance of shortening the period between the consideration of the petition and the admission of the patient. The remaining strictures upon the hospital relate to the financial department both of itself and Bridewell, (with which it is urged its union is no longer reasonable), and they are made with a degree of severity which is entirely absent in the corresponding remarks on the other hospitals.

FATAL CASES

OF

OBSTRUCTION AND ENORMOUS DISTENSION OF THE BELLY,

Arising from a peculiar Conformation of the Colon.

BY ANDREW BUCHANAN, M.D.

Professor of the Institutes of Medicine in the University of Glasgow.

(With 12 Figures in illustration.)

[Concluded from p. 105.]

THE three cases which I have just narrated exhibit many striking points of resemblance. In all of them the most remarkable symptom was the extreme distension of the abdomen. So great was this distension, as to communicate, both to the unhappy sufferers themselves and to the bystanders, an apprehension of the actual bursting of the belly. On opening the cavity after death, the inflated bowels were propelled with such force through the wound, as rendered extreme caution necessary to avoid injuring them; and on puncturing the bowels themselves, the imprisoned gases rushed forth like the winds from the cave of Æolus, or, to speak a little more plainly, with a violence that would have extinguished a candle held at some distance from the aperture. To those who have not seen this complaint, I cannot convey a more accurate idea of it than by comparing it to the disease which occurs in cattle after eating too

much wet clover or othersucculent herbaceous food. I have seen several cows affected with this complaint, and in none of them was the swelling greater than in the cases described above.

The next most remarkable circumstance attending these cases was the total obstruction of the bowels; to overcome which the most powerful purgative medicines introduced into the stomach, and all clysters and suppositories, were quite ineffectual. At the same time, the facility with which clysters could be injected into the rectum, as well as the examination of that intestine with the finger, showed the cause of the obstruction to be at some distance from the external orifice.

Another circumstance worthy of remark is, that in all these cases, previous to the occurrence of complete obstruction, the bowels had been long affected with constipation. This was rendered obvious, independently of the report of the patients, by the accumulation of fæces in the bowels, which was so very large, that it must have been a long time in collecting. The same point was still further evinced by the extreme dilatation of the colon, which shewed clearly the existence of a dilating cause, which had been in operation most probably for years before the death of the patient. The fully inflated colon, in its normal state, I have found to be about two and a half inches in diameter; now in the case above mentioned, it was from five to six inches in diameter; that is, it contained at least four times as much fæces as when quite full in its ordinary state. It was the large intestine alone that was thus dilated; for the small intestines, although fully inflated, were not wider than natural.

Death took place in about twelve or fourteen days from the occurrence of the total obstruction of the bowels. The disease must therefore be regarded as an acute one; and this enables us to distinguish it from certain chronic affections, attended with swelling of the belly and obstruction of the bowels. To what cause is death to be ascribed in such cases? The mere obstruction of the bowels cannot be considered as an adequate cause, since men have been known to live for more than a quarter of a year without any alvine evacuation. Neither was the cause inflammation of the bowels; for although inflammation

had obviously been going on in one of the cases mentioned above, it must have been a mere accessory, since there was no inflammation in the other two cases. Can the elevation and immobility of the diaphragm, and the encroachment of the abdominal viscera upon the cavity of the heart and lungs, be regarded as the cause of death? It may probably be an accessory cause; but I am disposed to think that the principal cause of the patient's death is the excessive distension of the belly, which produces the most excruciating and unremitting pain, and thus gradually exhausts the powers of life. In the analogous disease of cattle, already mentioned, death seems to proceed from the same cause; but it takes place in them much more rapidly—generally in the course of a few hours—owing to the distension being much more sudden, and acting upon tissues not previously habituated to that kind of irritation.

The symptoms enumerated above—the enormous tympanitic swelling of the belly, the complete obstruction of the bowels, the emptiness and large size of the rectum, and the acute course which the disease observes—appear to me to be sufficiently characteristic to enable us to distinguish this disease from all other kinds of tympanitic swelling and constipation.

With respect to the appearances on dissection, in all the cases the colon was the organ principally, and, as was universally thought, primarily affected. It was much longer than usual, and occupied an unwonted situation, lying in front of the small bowels; it was also much enlarged, having an area four times larger than when fully distended in its ordinary condition. These appearances are partly to be referred to primordially confirmation, and partly to the long-continued action of a distending cause. That the great length and unusual disposition of the sigmoid flexure must be referred to primordially conformation cannot, I think, be doubted. On the other hand, the great width of the intestine must have been gradually produced, and could not proceed from original formation, as was obvious from the attenuation of its coats and other appearances. Before I was aware that the length of the intestine varied from original confirmation, I laboured to persuade myself that the elongation of the colon, as well as its dilatation,

FIG. 7.—Morgagni.

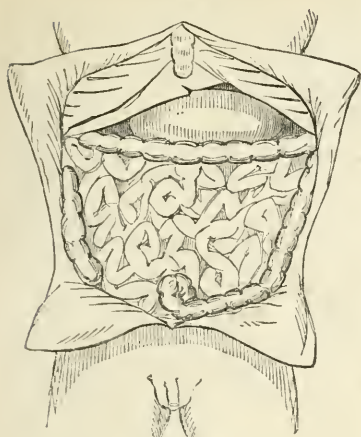


FIG. 10.—Dr. Abercrombie.

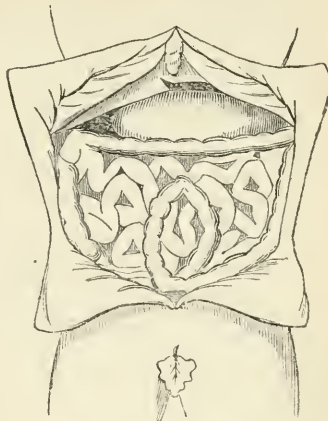


FIG. 8.—Morgagni.

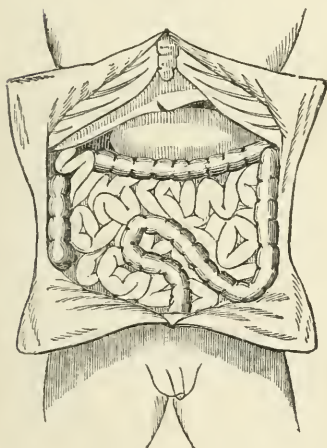


FIG. 11.—Dr. Buchanan.

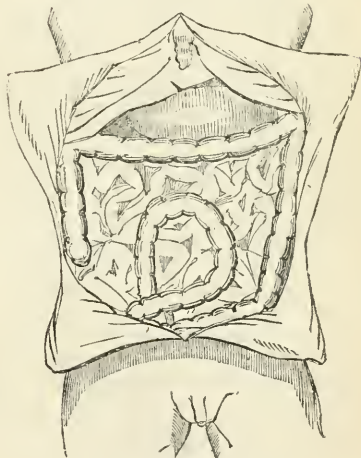


FIG. 9.—Drs. Hunter and Buchanan.

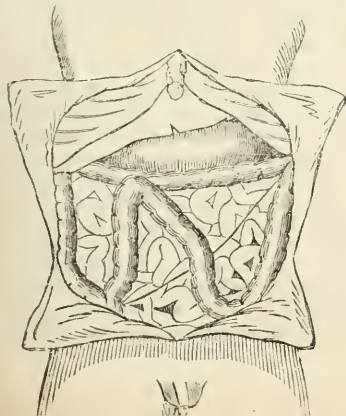
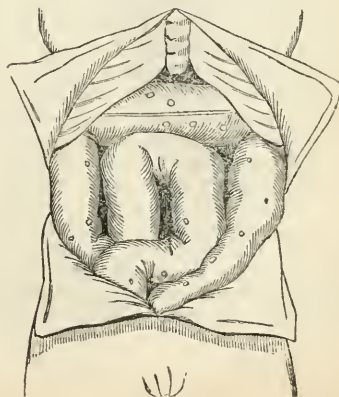


FIG. 12.—Dr. Buchanan.



might be the effect of long-continued tension. How easily we impose upon ourselves by such reasoning will be seen from a case quoted below, in which the colon, from original formation, was shorter than usual; and the narrator, to explain the difficulty, argues that an increase of width must be necessarily attended with a diminution of length.

In the two cases last narrated, a twist of the colon was supposed to be the cause of the obstruction of the bowels; and this opinion accords with that entertained of all the other cases of this disease which I have found on record. Nevertheless, I much doubt the accuracy of this opinion. When we remove the intestines, to examine them out of the body, we find them very apt to become twisted, knotted, and otherwise variously entangled. Nothing so well illustrates the wisdom of the provision by which such accidents are prevented from taking place within the body. By a twist of the intestine may either be meant, that a single ply of the intestine is twisted round its own axis, or that an angle of the intestine is twisted—that is, that two conterminous plies are twisted round each other. This last kind of twist will be adverted to in reference to a case quoted below. It is certainly possible, but we cannot easily conceive a force acting within the body capable of producing it, and maintaining it when produced. The other kind of twist is that supposed to have existed in all the other cases. I cannot, however, see how it is possible, without an opening in the mesocolon large enough to admit of the intestine revolving on its axis, to produce such a twist as would cause obstruction of the bowels. I can conceive it possible that a violent and irregular action of the muscular fibres could produce a twist, half round, of a particular portion of the intestine; by which I mean, such an oblique folding of that part of the intestine, that a given point of its circumference would be carried from the side on which it naturally lay to the side diametrically opposite; but I cannot conceive the production of a complete twist of the intestine, by which I mean, a point of the circumference being carried first to the opposite side, and then completely round to the situation from which it originally set out. I can conceive no force, acting within the body, capable of producing such an effect; and, waiving the ques-

tion of the existence of an adequate force, I believe the effect to be physically impossible without rupture of the mesocolon. Still further, any twist depending upon irregular action of the muscular fibres could not, as appears to me, be maintained for so long a period as twelve or fourteen days, and still less for whole months. Now I have shown that, in the preceding cases, the bowels bore marks of having been for a long time in a state of obstruction, although it was only when that obstruction became complete that the disease here under consideration was developed.

In the history of the case first narrated, I have described in what way the proximal convolution of the sigmoid flexure passed in front of and compressed the extremity of the colon, a little above where it terminates in the rectum. Now when we consider the great length and unusual position of the colon in the other two cases, and in similar cases upon record, it appears to me not improbable that the same, or a similar cause of obstruction, may have existed in them also. There is one circumstance with respect to the course of the colon in case first, which may either be explained as proceeding from original confirmation, or from subsequent displacement; I mean the sweep to the right which the intestine took after leaving the left ileum, and before ascending to the epigastrium. That this disposition was not the effect of primordial conformation, it is impossible to say; but we might oppose to that opinion the analogy of two cases described above—that of Dr. Hunter, and that observed by myself at the Cholera Hospital—in which the intestine, immediately after leaving the ileum, passed obliquely to the upper region of the belly. If such was also the original conformation in case first, we must suppose that when the feces began to accumulate in the oblique portion of the colon, they carried it downward by their weight towards the pelvis, as appears to me would naturally take place.

In describing the two cases referred to at the beginning of this essay, I mentioned as a circumstance worthy of remark, that in both of them the colon entered the pelvis on the right side, instead of descending in the usual way over the promontory of the sacrum, and entering it in the centre. The end of the colon was thus removed as far as

possible out of the reach of the danger of being compressed, by the proximal portion of the sigmoid flexure passing in front of it. It seemed, therefore, as if nature, retaining in her vagaries the same provident spirit which distinguishes her more uniform operations, had foreseen the danger to life which the unusual formation of the colon would produce, and had taken steps to avert it.

I have been for many years past anxious to have an opportunity of dissecting a cow dead of over-distension of the belly. I entertain little doubt that, on examination, it will be found that the distension of the paunch and adjacent parts of the alimentary tube produces, by its pressure, a mechanical obstacle to the transmission of the excrementitious mass; or, more probably, prevents the act of regurgitation, which, in ruminating animals, is essential to digestion. This appears to me at least to be the most probable explanation of the confinement within the body of the animal—of the wind and excrement with which it is distended almost to bursting. Should this conjecture be verified, there will be a very close analogy between this disease of cattle and the disease of the human subject described above. In both it is the severe tympanitic distension of the belly that occasions death; and the chief difference between them appears to be, that while in cattle the tympany is produced by the sudden ingestion of flatulent substances into the stomach, in the human subject it is produced by the gradual accumulation of them in the colon.

From the account now given of this disease it must be obvious that, in treating it, all purgative medicines are useless, as well as all clysters administered in the ordinary way, so soon as the rectum has been emptied of *fæces*. The first and great object of our treatment should be to remove, if possible, the mechanical obstacle to the evacuation of the bowels. To facilitate this object the patient should be placed upon his hands and knees, or standing, with his body inclined forward, which has the effect of freeing the end of the colon from the weight of the first turn of the sigma lying over it. An instrument should now be introduced into the intestine, for the purpose of dilating the compressed portion. The instrument

for this purpose is the *œsophagus tube*, armed with a large sponge at the end. The sponge is easily fastened by means of a string attached to it, and passing through the tube; while, by means of the other half of the string running outside the tube, the sponge can be withdrawn when we wish to use the tube as an injecting instrument. In the first instance, however, we are to use it as a probe and dilator. After carrying it up as high as we may deem necessary, it is to be withdrawn, when, by examining whether or not the sponge be smeared with *fæces*, we can ascertain whether or not it has passed the compressed portion of the intestine. If it have passed, we should reintroduce it, and by passing and repassing it up and down through the compressed part, we should endeavour if possible to form a free passage, by making an indentation in the soft feculent sac, lying, in the position of the body here supposed, below it. Very probably we may succeed in this way in procuring a discharge of *fæces*, which without any contraction of the muscular fibres, would be protruded along the passage by the elastic force of the condensed air in the surrounding intestines. If we do not succeed, the tube must be again carried up as far as possible, and the sponge withdrawn, when we must inject tepid water or air, as may be found best to answer the purpose.

Suppose that we do not succeed in procuring any evacuation by these means, or that we succeed only partially, so that the tension remaining undiminished, it is still obvious that death must ensue, is the patient to be abandoned to his fate, or are there still other means of relief in our power? I answer without hesitation, that in the circumstances just supposed we should puncture the bowels. With what view should this operation be put into practice? Not certainly for the evacuation of *fæces*, which could not be prevented from escaping in part into the peritoneal cavity, and would so cause death. It should be performed, therefore, solely with the view of discharging air from the bowels, which will have the double effect of relieving the sufferings of the patient, and facilitating subsequent attempts to evacuate the *fæces* through the natural passages. In what situation should the puncture be made? This question reduces itself to the more simple one—in what part of the colon

should the puncture be made? for there is no other part of the intestine, in such cases, accessible to the puncture. The whole of the sigmoid flexure, and greater part of the left colon, containing only feces, are excluded from consideration, and the transverse colon is excluded by the uncertainty of its position. The right colon is the part of the intestine most uniform in its seat, and it is likewise distended almost entirely with air. I would therefore recommend puncturing the right colon, about the middle of its course, with a small trocar. On withdrawing the stilette, the confined air should be allowed fully to discharge itself, after which the attempts to evacuate the bowels may be renewed, probably with better success.

Still further to illustrate this disease, I subjoin the history of the only three examples of it which I have been able to find in the records of medicine.

The first occurs in the *Sepulchretum Anatomicum* of Bonetus—the father of pathological anatomy, and, we may therefore add, of rational medicine. It is extracted from the observations of Tidicæus, who flourished in the end of the sixteenth century; but not having access to the original work, I translate from the *Sepulchretum*, lib. iii. sect. xiii. p. 197:—

A pregnant female, during the whole period of gestation, and not less during the last month than before, was engaged in needle work without ceasing, from an early hour in the morning till late at night, constantly sitting, as it were, contracted and incurvated upon herself, with her head down, as is usual with those so occupied. Hence she became so costive, that she would have no movement for whole ten, fifteen, or even twenty days. This she esteeming of small consequence, neglected, persevering as long as she was able at her sedentary employment, until, on account of the incredible swelling and pain of her belly (both of which proceeded from the retention of the contents of the bowels), she was no longer able to sit at work. The unhappy woman at length takes to bed; the pain and swelling of the belly, and feeling of anxiety thence arising, increase daily, and to such an extent, that it was obvious to all who saw her that she was in a most dangerous condition. Suppositories and clysters, administered to move the bowels and alleviate pain, availed but

little; for whatever was the quantity or quality of the clyster administered, it only remained some time in the rectum (as afterwards appeared), soon coming away, and bringing nothing along with it. Labour at length came on, and the midwife being called, the fœtus, although immature, was nevertheless born alive. But notwithstanding the expulsion of the fœtus the belly did not in the least diminish in size, but was just the same, that I may not say greater; and the swelling, and resilience, and pain remained, so as to be terrible in appearance to the bystanders, who thought that the belly would burst on account of the excessive tension. It is needless to say more: the patient died, herself requesting that her belly should be opened after death and inspected, which was accordingly done.

The peritoneum being divided, and the omentum lifted up, the colon was the first object that presented itself, removed from its natural situation, and altogether gangrenous. Its colour was red, with a tinge of green (ex cæruleo rubricans), which colour also was visible through the abdominal muscles and skin, extenuated by over-distension. The intestine was distended with mere excrement, and of such a size as to resemble, in that respect, a jug, that would admit a boy's head. All the other higher intestines were, beyond measure, turgid with flatulence: hence the colon, at that part where it descends from the left kidney, had departed from its natural situation, as far as the region of the umbilicus, under which, situated between the tracts of the recti muscles, it was seen descending in the middle of the belly, in a straight line from the stomach. This arose partly from the pressure of the wind contained in the bowels behind it, and partly from the quantity of excrement in itself, which, extending the intestine laterally, rendered it shorter, or caused a contraction in point of length. Hence, without doubt, a twist of the lower part of the colon having taken place, where it is continuous with the rectum, the passage for the egress of feces and wind, and for the ingress of clysters, was completely shut up. On opening the colon, such a glut of fetid excrement flowed forth as if you had slain some beast of burden. And hence it is evident what may be brought upon pregnant women by a too sedentary mode of life and neglect of

the functions of the bowels, more especially in the last month of gestation.

It is worthy of remark, that the twist of the colon is here spoken of rather, apparently, as a deduction of reason than as a matter of observation. "*Hinc absque dubio ipsius coli . . . contorsione facta.*" To me it appears highly probable that the severity of this disease arose from the unusual position of the lower part of the colon. It lay in front of the small bowels, right in the middle of the belly, in which situation it must have been compressed between the inflated small bowels lying behind it, and the gravid uterus lying throughout its whole course in front of it. This is, therefore, obviously the same disease as before. The symptoms are graphically described, and coincide exactly with those observed in the preceding cases; and further, the disease originates in an abnormal formation of the lower end of the colon. It is, however, a variety of the disease, the colon being shorter than natural instead of being longer. Such a formation could not, so far as I can see, be dangerous but to pregnant females. The fact of the bowels being seen through the parietes of the belly is confirmed by a case given below.

The next case was observed by Dr. Abercrombie, of Edinburgh, in the year 1815, and is recorded by him in the sixteenth volume of the *Edinburgh Medical and Surgical Journal*, page 15.

A man, aged 60 (23d April, 1815), was affected with vomiting; pain in the abdomen, which was swelled and tympanitic; obstinate costiveness; pulse 108, and soft; countenance pale and exhausted; pain not increased by pressure. Had been ill a week, during which powerful remedies have been employed, without benefit. Had formerly two attacks of the same kind, one of which continued a week. This man lived in great distress till the 28th, without any remarkable change in his symptoms. The swelling of the abdomen increased gradually, until it resembled that of a woman at the most advanced period of pregnancy; yet, to the last, he could bear pressure upon every part of it. His pulse varied from 108 to 116. His death was sudden: he had been out of bed and dressed the day before, and, on the morning of the day on which he died, he did not appear worse than usual.

On opening the abdomen, a viscus came into view, which appeared to be the stomach, enlarged to three or four times its natural size. On a more accurate examination, this turned out to be the sigmoid flexure of the colon, in such a state of distension that it rose up into the region of the stomach, and filled half the abdomen. The stomach was contracted and healthy. The small intestine was healthy at the upper part; lower down it became distended, and of a dark colour; at the lower part it was very much distended, with some spots of gangrene. The colon was greatly distended—in some places it was not less than five or six inches in diameter—and terminated in the distended sigmoid flexure already mentioned. The rectum was healthy and collapsed. The sigmoid flexure was of a dark livid colour, and contained air and thin feces. What appeared to be the cause of this affection remains to be mentioned. The enlarged sigmoid flexure was found to have taken a remarkable turn upon itself, so that what was naturally the right side of it lay on the left, in contact with the descending colon, and the left or ascending part of it lay on the right. The consequence of this was, that the rectum as it descended from the former, passed down behind the lower or first turn of the sigmoid flexure, where it first takes the turn from the descending colon: also, the rectum itself, at this part received a twist, as if half round. Exactly at the point where this twist was, the distension and dark colour of the intestine terminated abruptly, and it became white and collapsed. At this part, however, there was no mechanical obstruction, for the parts were pervious, and, except the twist, perfectly healthy: and farther it happened, in this singular case, that I had an opportunity of ascertaining the state of them during life. On the 25th, three days before his death, having exhausted all the ordinary means, I was induced to examine the rectum with a large ivory-headed probang, and I found, at a certain depth (which was afterwards found to correspond with the point where the rectum was twisted), a slight obstruction to the passage of the probang; however it passed up with little difficulty, and was withdrawn without any. A piece of the intestine of an animal,

tied at the end, was carried up beyond this point, and then strongly distended by injecting water into it. In this distended state it was retained for some time, and then slowly withdrawn; but no discharge followed, though, as I have already mentioned, the distended part contained only air and fluid fæces.

The case is valuable, on account of the singularity of the course of the sigmoid flexure of the colon, and the minuteness with which it is described. It is to this case that allusion is made above in speaking of the possibility of a twist occurring in an angular portion of intestine, such as is the sigmoid flexure. Here the two contermious portions of the colon, forming the angle, were turned half round each other; but it is obvious that there is no physical impediment to their making a complete revolution, or even more than one: but what force acting within the body could produce such an effect? The cause of the obstruction seems not to have been the twist, but the compression of the lower end of the colon, between the proximal end of the sigmoid flexure, greatly distended, lying in front of it, and the inflated small bowels lying behind it. This is, therefore, the very same kind of obstruction that occurred in the case first narrated, only arising from a different disposition of parts. The marks of inflammation observed, render it probable that the patient's death was accelerated by that cause, and did not proceed from mere over distension of the belly, which was no larger than that of a woman at the full period of gestation. The author indeed, has ranked this case among those unconnected with mechanical obstruction of the bowels. He seems, also, to have looked upon the length of the sigmoid flexure of the colon as the effect of distension, and not of original conformation.

The only other case which I have to bring forward occurred in our own city, and was treated by the late Dr. Richard Miller, in the Royal Infirmary, in March 1819. No account of it, so far as I know, has yet been published. The following abstract is taken from the 14th volume of the Manuscript Essays of this Society:—

Michael O'Connor, æt. 47, labourer. Nothing had been passed through his bowels for seven days before his admis-

sion into the hospital, and he had been previously subject to constipation. His belly was much swollen and tympanitic. The strongest purgatives and injections were administered without any effect. Dashing cold water upon the feet, and every thing else that could be thought of, was tried, but the bowels could not be moved. Meanwhile, the swelling of the belly gradually increased, and before the patient died, the integuments and muscles of the abdomen were so much upon the stretch that "the convolutions of several of the intestines" could be seen through them. Death took place three days after admission to the hospital, and ten from the time of the last alvine discharge.

The stomach was healthy, and quite empty. The small intestines were greatly distended by flatus of an extremely fætid odour. The colon was also most enormously inflated, particularly the ascending and tranverse portions. The left colon, again, and the sigmoid flexure, were literally stuffed to the utmost with fæculent matter, and about six inches in diameter. At the termination of the colon in the rectum, over the promontory of the sacrum, the gut formed a turn on itself, from left to right, as if half twisted round. From the pressure exerted from above, by the "extreme" collection both of excrement and air, this twist was found to form a complete obstruction. The mucous tissue of the intestines, especially of the colon, was of a reddish colour throughout. This appearance did not extend beyond the twist, in the situation of which it was of a much deeper hue than elsewhere. The rectum was empty, and of its natural colour. The peritoneal covering of the bowels was every where natural, as well as the other abdominal viscera. It is to be regretted that nothing more is said of the length and course of the sigmoid flexure of the colon than that "this part of the gut lay more inclined towards the linea alba than in its natural situation;" and at another place, that "the sigmoid flexure was inclined, and actually a little displaced upward."

Glasgow, 110, St. Vincent Street,
June 28, 1839.

SUCCESSFUL CASE OF EXTIRPATION OF THE UTERUS.

To the Editor of the Medical Gazette.

SIR,

You will greatly oblige me by the insertion of the following case in your valuable periodical.—I am, sir,

Your obedient servant,

J. BOWER HARRISON, M.R.C.S.L. &c.

Lower Mosley-street, Manchester.
April 10th, 1840.

Marianne Morris*, æt. 28, was admitted a home patient of the Manchester Royal Infirmary, on the 5th of Dec. 1839. She was complaining of a discharge from the vagina, from which she had suffered for a considerable period. The constitution appeared evidently to have been much injured by the continuance of the disorder; the countenance was of a pale exsanguineous aspect, and the whole frame in a deranged and debilitated condition. The slightest exertion occasioned a considerable acceleration in the motion of the pulse, together with a somewhat difficult and hurried respiration. She stated that she was troubled with occasional pains in the loins and thighs, and had rheumatic pains in the shoulders and various parts of the body. The tincture of sesquichloride of iron was prescribed in the infusion of quassia, but it was not attended with any apparent relief. The acetate of lead was afterwards employed for a short time, but with a similar want of success. Upon a more particular investigation of the case, I learned that the discharge was frequently of a bloody nature; and she subsequently acknowledged the existence of a bearing down, for which she had been advised to employ a pessary, but was unable to continue its use. I then suggested the necessity of an examination, from which I discovered that the uterus was inverted. Upon her forcing down, whilst in the sitting posture, I was enabled to make a very complete examination of the tumor; it was of a pyriform shape, and presented, at the fundus, a smooth globular surface, which bled profusely on the slightest touch. At the neck it was surrounded by the reflection of the mucous membrane, which formed a little band, embracing the cervix uteri.

It seems that, about five years ago she was delivered of a female child, and, according to her representation, the placenta was hastily brought away, so that it is probable the uterus was inverted during its removal. It does not appear that she had been previously subject to a prolapsus of the womb, which has been considered, in some cases, to have been a predisposing cause of this affection*.

The uterus, having been so long inverted, had, no doubt, undergone considerable structural alteration, so that all attempts to reduce it were found unavailing. It was thought advisable, therefore, as the woman was rapidly falling into a hectic state from the repeated losses of blood which she sustained, and the continued irritation kept up by the mechanical action of the tumor, to propose an operation for its removal. To this the woman readily acceded; indeed, it will be easily imagined that her condition must have been of the most distressing nature. After going to stool, she had, at times, great difficulty in replacing the tumor, which could not always be accomplished without the aid of an assistant; and these occasions were almost invariably productive of considerable discharges of blood.

Accordingly, I passed a ligature round the uterus, on the 29th of Feb., 1840, at about half-past 3, p.m., assisted by Mr. Gaskell and Mr. Smith, the house-apothecary, and surgeon of the infirmary. The operation was performed whilst the uterus was forced down by the patient, who was in a sitting position. The instrument which I used was a simple rod of iron, pierced at the extremity with a small round aperture. The ligature, which consisted of three pieces of the ordinary kind, twisted together, was passed round the uterus a little below its neck, the two extremities being drawn through the aperture at the end of the instrument, and fastened to some small projections at the handle.

The ligature being properly tightened, the handle of the instrument was secured to the thigh by a bandage, which was also passed round the waist, in order more effectually to prevent any disturbance of the instrument. I saw her again at 8 p.m.; she had evacuated the bladder, and was tolerably easy.

The following particulars are tran-

* Residence, Sandiford's Court, Print Street, Buxton Street, London Road.

* See Mr. Windsor's remarks, in the Med. Chir. Trans. vol. 10, p. 360.

scribed from the memoranda which were made at the periods of their respective dates :—

March 1, half-past 9 A.M.—Complains of considerable pain in making water, of which she had parted with a considerable quantity; has slight pain at the umbilicus, but no pain in the neighbourhood of the uterus: she passed a tolerably quiet night, but has not had much sleep; she had taken a little gruel shortly before I saw her, but it was rejected immediately afterwards. 2 P.M. Has made water again, but still complains of the pain which it occasions; the bowels have not yet moved; the tongue is clean, and the pulse regular. Half-past 8 P.M. Is rather more restless; complains of tenderness in the abdomen, and pain in the back and loins; has taken a little tea and toast, which have staid on her stomach; warm flannels were directed to be placed on the abdomen; they did not, however, give much relief; the tumor is of a livid gangrenous appearance, and emits a fetid smell. The following draught was ordered to be taken at bed-time :—

R Træ. Opii, ℥xxiv.; Mist. Am. Acet. ʒj, M.

March 2, half-past 7 A.M.—Has passed a tolerably good night, though she has not had much sleep; the tongue is clear, and the pulse regular; she still complains of tenderness in the abdomen, together with a griping pain. As the bowels have not yet been opened, to use the common enema. The urine comes away in drops; but on passing the catheter I satisfied myself that there was no retention.—Half-past 7: The enema has operated on the bowels, and in part relieved the uneasy feelings which were experienced; she cannot now perceive any sensation when the tumor is touched, but is immediately aware if the handle of the instrument be moved: the smell from the tumor is exceedingly offensive, for which she was directed to bathe the parts with a solution of chloride of lime: to take the draught as before.

March 3rd.—Has passed a good night, and seems going on well; the pain in the abdomen is easier; the urine continues to dribble; the tumor appears to project considerably further from the pudendum, and has a more gangrenous appearance; the smell is less offensive. At 7 P.M., I saw her again, with Mr. Gaskell: she said she had not been so well during the last half hour, having

had more pain in the abdomen, but does not seem materially altered: the pulse continues natural, the skin cool, and the tongue clean and moist; she has no headache or thirst. It was thought advisable to tighten the ligature, which was done by drawing the string downwards, and holding it firmly against the handle of the instrument, while it was secured: she was afterwards ordered a draught containing 24 drops of the tincture of opium, which was to be repeated at bed-time.

March 4th.—Since the ligature has been tightened, she has had much pain in the loins and iliac regions; shooting towards the uterus. The water continues to dribble. The first draught was rejected, but the second remained on the stomach. She slept for about an hour during the night. A chamomile bag to be placed on the abdomen. As she has not had the bowels moved since the enema was administered, I ordered her a few grains of rhubarb and calomel, which were to be repeated if necessary; after the operation of which she is to take two tablespoonfuls of the following mixture three times in the day :—

R Morphine Acet. gr. ij.; Mist. Am. Acet. (Pharm. Manc.) ʒxij. M.

The tumor appears to protrude much farther than before, and is greatly augmented in bulk.

5th.—Has experienced some griping pains in the abdomen, which were, no doubt, attributable to the operation of the powder. There is no apparent alteration, if I except a greater protrusion of the tumor.

6th, 12 A.M.—Continues better; the tumor seems to project further from the pudendum, so that the part which is embraced by the ligature is now evident: there is a distinct groove at the line of demarcation, the membrane above being of a bright red colour. She experiences considerable pain in voiding the urine, which continues to dribble as before; the catheter was passed, but the bladder did not contain any quantity of urine.

The uterus, which is now very much increased in size, occasions an unpleasant dragging of the neighbouring parts, and, together with an offensive discharge from the surrounding membrane, has produced a troublesome excoriation of the nymphæ and perineum.

6th, 9 A.M.—Has a slight appearance of exhaustion, and the tongue is a trifle more dry than before. Mr. Smith accompanied me to-day, and we tightened the ligature, which gave her a good deal of pain. At Mr. Smith's suggestion, I ordered her a grain of sulphate of quinine and half a grain of opium, to be taken three times a-day.

9 P.M.—Has been more restless, and seems more fatigued; complains of much pain in the back and thighs.

R Tr. Opii, ℥xxx. h. s.

7th, 9 A.M.—Has passed a better night, but complains of tenderness over the pubes, and has vomited during the night*. To have an enema.

8 P.M.—Appears considerably worse. She has had much pain in the abdomen, also in the left groin, and in the course of the round ligament. She is very restless, and the countenance has an appearance of great depression.

To omit the Quinine, and take a grain of Calomel and Opium every four hours. Six leeches to be applied to the left groin.

The enema had operated on her bowels.

8th, 8 A.M.—Has passed a tolerably good night, but has an appearance of anxiety and exhaustion.

R Ammon. Sesquicarb. ʒss.; Aquæ Fontan. Mist. Camph. aa. ʒiij.; Tr. Opii, gtt. xxiv.; Cap. f ʒi. ter indie. To take a little porter, and have a more generous diet.

At night she seemed rather better; the food staid on her stomach, but as the medicine seemed to make her sick, she was directed to discontinue its use; the bowels were moved during the course of the day.

March 9th, 9 A.M.—Has not had much sleep during the night, but seems rather better. She has occasional lancinating pains in the groin, and some pain over the pubes. She takes a little wine and porter.

March 10th.—Has not passed a good night, and is rather fretful this morning;

* It may be excusable to state, as a curious instance of the rapidity with which the imagination works on the impressions of the senses, that during her sleep she dreamed that the various objects which she saw, on close inspection, were found to be in a decomposed or decayed state. She especially mentioned that she fancied some friend had kindly furnished her with some little articles of luxury; but, on coming to examine them, they were found to be in a state of putrefaction.

she does not, however, seem materially worse. The tumor appears considerably enlarged, and she complains much of the excoriation which it has produced. This I endeavoured to prevent as much as possible, by covering the tumor with pieces of lint, and afterwards folding it in a piece of oiled silk; also, by carefully sponging the adjacent parts.

R Træ. Opii, gtt. xx. h. s. s.

March 11th.—Has passed a better night, but is much inconvenienced by the excoriations. The separation is steadily progressing. The membrane above the ligature is covered with semi-transparent flakes of coagulable lymph.

March 12th.—Did not get her draught last night, and has not passed so good a night in consequence.

March 13th.—To-day I tightened the ligature, which occasioned a good deal of pain in the loins, pubes, and groin. To have an opiate.

March 14th.—No record kept.

March 15th.—I again drew the ligature tighter, which produced much pain as before, especially in the left groin.

March 16th.—No record.

March 17th.—The ligature was tightened.

March 18th.—To-day the uterus unexpectedly became detached as I was tightening the ligature. There was no bleeding afterwards.

The tumor is very considerably augmented, being about the size of the human heart. It is of a pear shape, the apex being much attenuated. It weighed $14\frac{1}{2}$ oz.; and, on making a section of it, the parietes were found to be more than an inch in thickness; in some places nearly two inches. On the outside it presents a dead, disorganized appearance; but the section displays a fleshy character, and by no means a decomposed texture. In some measure it resembles a section of the liver, the veins being exactly like those seen on cutting that viscus. At the extremity, at which the uterus had separated, which was very small, a nerve was discovered, about the thickness of an ordinary sewing needle. It was probably to the situation of this nerve that the pain which was experienced in the pubes and groin was owing. At that part of the tumor with which the ligature had been in contact, a distinct margin was discoverable, presenting a cartilaginous character.

March 19th.—She has not passed a good night, and complains of pain in

the throat on swallowing, and of an aching sensation in the limbs.

R. Mist. Antimonial (Pharm. Manc.) ʒj.
Appl. Hirud. iij. gutturi.

On the 20th and 29th, she continued to suffer from an aching sensation in the limbs; she had also much pain in swallowing, and a feeling of soreness throughout the whole length of the alimentary canal. There was a slight eruption visible at the corners of the mouth. I directed her to take linseed tea.

After this date she rapidly recovered, and is now fairly re-established in health, and able to pursue her domestic occupations. There is already a manifest improvement in the appearance of the countenance, and every prospect of permanent advantage.

CURE OF SQUINTING.

To the Editor of the Medical Gazette.

SIR,

I TAKE the liberty of sending you a short paper on Strabismus convergens, as cured by me by division of the rectus internus muscle, and shall feel obliged by your giving it an early insertion in your valuable journal.—I am, sir,

Your obedient servant,

A. FRANZ, M.D.

10, Golden Square,
April 15, 1847.

In the beginning of February, in reading the *Berlin Medicinische Zeitung*, No. 46, November 12, 1839, I became acquainted with Professor Dieffenbach's important discovery for the cure of squinting by the division of the shortened muscle which draws the eye out of its proper position.

With the view of ascertaining whether after division of the muscle the healing process would favourably go through its stages, notwithstanding the motion of the eyeball, I determined to try the operation on a rabbit. In the presence of my friend, Mr. Steinhäuser, I divided the *musculus rectus superior* and *obliquus superior* in the right eye of the rabbit, and the *rectus superior* of the left eye, from which I also cut off about one line and a half. After the operation the animal was allowed for the space of one month to enjoy its full liberty, at the end of which term I had it killed. On

making a careful dissection of the muscles of the eyes, I found the *superior rectus* of the left eye not only to have attained its proper length, but also all the divided muscles of both eyes firmly attached to the sclerótica in their right position. Before operating on the living subject, in order to convince myself of the most simple and best mode of conducting this operation, I performed it several times upon dead bodies, and am now enabled to give an account of two cases which I operated upon on the 10th of this month.

CASE I.—Louisa McCleish, aged 18 years, a healthy girl, with large light eyes, affected with squinting, according to her mother's account, since her second year, and for which she could assign no cause, presented herself for operation, this defect being a great impediment to her in her daily occupation as sempstress. On examination, I found the left eye slightly inverted, but the right eye so much turned inwards, that one-third of the cornea was hidden by the inner canthus. She stated that the right eye was larger than the left, having been frequently told so by others; but this I found to be an error, probably arising from the circumstance that so little of the cornea was visible, whilst a large portion of sclerótica presented itself. With considerable exertion of will she was scarcely able to direct the right eye so as to look straight before her, and could not in the slightest degree move the globe towards the exterior angle. When not under the influence of the will this eye instantly returned to its usual position inwards. On closing the left eye she could only distinguish large objects, and was not able to read even the largest print.

Having provided myself with three assistants, the patient, whose left eye was closed by a bandage, was seated facing the light with her head inclined backwards, in which position it was retained by an assistant, who at the same time fixed the upper eyelid with a retractor. A second assistant kneeling before the patient, fixed the lower lid by means of a retractor, held in his right hand: the eyelids being by these means well secured and drawn asunder, I perforated the conjunctiva at the inner corner of the eye close to the eye-ball, with a small and very sharp hook, and gave it to the second assistant to hold with his left hand, with which he was by

means of this hook to draw the globe outwards. I next made a semicircular incision with a scalpel through the conjunctiva, about six lines in length; then dissecting through the subjacent cellular tissue, exposed the internal rectus muscle, and terminated the operation by dividing it close to the sclerotica with a very small pair of curved scissors, the one blade of which was passed beneath the muscle. The duty of my third assistant was to hold the patient's hands, reach me the instruments, and attend to the bleeding, which in this case was very inconsiderable. On the removal of the hook from the conjunctiva, the eyeball was no longer inverted, but stood in the proper position, the pupil occupying the centre of the eye. The edges of the wound in the conjunctiva were brought together by the motions of the eye itself, which were perfectly free in all directions, except inwards. Cold water dressings were ordered, and a common draught. The patient then walked home.

I saw her again in the evening, when no febrile symptoms had made their appearance: the conjunctiva was slightly reddened; no pain was present; the motions of the eyelids and globe were free, the pupil was in its proper position, and since then the patient has been doing well.

CASE 2.—Emma Mattocks, aged 17 years, a girl of strumous habit, with a dark eye of moderate size, having squinted, according to her mother's report, since her fourth year, but for which she could assign no satisfactory cause, submitted to the operation in order to be freed from the deformity. The right eye slightly diverted, but the left in this case was turned inwards to such an extent that in the usual position the inner margin of the cornea was in contact with the caruncula lacrymalis. She could, with some effort, turn this globe a little beyond the centre of the eye, towards the outer angle; but with cessation of this effort of the will, the eye instantly returned into its former inverted position. On closing the right eye, she could not read even large print. The operation was, in this case, performed as in the former instance, and there was here also hardly any hæmorrhage. On removing the hook from the conjunctiva, the eye turned somewhat outwards. The motions of the eye were likewise perfectly free, and sufficed to bring the edges of

the wound in the conjunctiva in contact with each other. The same directions were given for the after treatment as in the former case, and the patient then walked home.

On paying my visit to her in the evening, no febrile symptoms were present; the conjunctiva slightly reddened, a trifling degree of pain, the motions of the eye-lids and globe free, the pupil still turned a little outwards, but not so much as immediately after the operation. On the next day, the conjunctiva was a little more injected, and the pains had not subsided, which I attributed to a cough, from which she was suffering at the time, causing a great determination of blood to the head. The pupil now stood in its proper position, and the motions of the eye were free. Six leeches were applied to the left temple, a hot pediluvium, a strict antiphlogistic regimen, and cough mixture ordered. Since then, the case has been proceeding favourably*.

In a letter of March the 28th, which I received from Dr. Dieffenbach, he states, that he had, on that day, operated on the 41st case—in all with an equally favourable result, so that in a fortnight after the operation it is impossible to distinguish which eye had been affected.

MEDICAL GAZETTE.

Friday, April 17, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

MORTALITY OF THE FRENCH AND ENGLISH ARMIES.

ALTHOUGH the French have served a pretty long apprenticeship to constitutional liberty, there is one of its advantages which they have scarcely yet learned to appreciate: we mean publicity, or the diffusion, throughout the people, of that official information which, under a despotism, is confined to the favoured few. Thus a late writer in the *Gazette Médicale*, after mentioning

* The further progress and result of these cases will be reported in a future No. of this journal.

that General Paixhans had endeavoured, in the Chamber of Deputies, to obtain official documents relating to the health of the French troops, thinks that the refusal of the government to furnish them was quite justifiable. Indeed, he is of opinion that such painful facts had better be kept quiet; "*ce n'est donc pas nous qui aurions fouillés dans les données de l'arithmétique funéraire et déclaré aux jeunes générations les chances de destruction qui les attendent sous les drapeaux.*"

The commentator*, however, thinks that, as the figures have been openly published by the General, it is lawful to discuss them; and he believes that every cause which contributes to augment the mortality of soldiers is capable of being obviated. Surely, then, General Paixhans deserves no blame for having "rummaged the data of funeral arithmetic;" and if censure must rest somewhere, it should be on the heads of the ministry, who, by refusing to set forth the extent of the evil, have refused the first step towards correcting it.

It appears, from this demi-official account, that the annual mortality of the French army is 75 in 1000, in the colonies; 70 in 1000, in Africa; 20 in 1000, in France; and 22 in 1000 in the whole army.

This is a greater mortality than occurs in the English service. Thus we find, in Mr. Marshall's excellent work †, that, in fourteen foreign stations out of fifteen, the annual deaths per thousand are less than 70. At Gibraltar, for instance, they are 22.3; at Malta, 22.3; at Bermuda, 28.9; at Bombay, 33.1; in Bengal, 44.5; and at Madras, 52.2. But, then, on the other hand, in the Windward and Leeward Islands, they are 67.0; and at Jamaica, 91.0; so, at the

stations whose climate most nearly resembles that of the French West India Colonies, there is but little, if any, superiority to boast of. But, while the annual mortality among the troops stationed in France is 20 per thousand, the deaths among our troops, at home, are only 15 in the same number.—(Marshall, p. 59.)

Here the difference is clearly on our side; a difference which may be attributed in part, we suppose, to British soldiers being better fed and lodged; but in part, also, to the more fastidious selection of men for the army. In France, where the conscription reigns, the question always is, whether the infirmities of a given man are sufficiently urgent to exempt him from service; in England, we rather ask whether some slight ailment, which the recruit would fain conceal, will allow of his admission into the army. Moreover, it has always been made out that the general mortality in this country is less than in France; and it is natural that this greater tenacity of life should extend to the soldier as well as the civilian.

The commentator in the *Gazette Médicale*, first points out the advantages of the soldier over the ordinary civilian, and wonders that the average mortality in the army is 22 per 1000, while in civil life it is only from 12 to 14. There is an error here, in both his statements. First, in comparing the military and civil mortality, we must leave out of the question the deaths caused by the burning sun of Martinique, Algiers, &c.; a deduction which will make the annual deaths 20 instead of 22. Secondly (which is a more important mistake), M. L. has understated the deaths of civilians in France by one-half. In a paper read before the *Académie Royale des Sciences* at Paris, by M. Moreau-de-Jonnés, in 1833, he stated that the annual mortality in France was 1 in 39. This will

* He speaks of himself as one of the medical staff at the Val-de-Grâce, and signs with the initials M. L. Can this be *Méridée Lucmce*?

† On the Enlisting, Discharging, and Pensioning of Soldiers, &c., second edit. p. 58.

make $25\frac{1}{2}$ in 1000, instead of 12 or 14; and will most materially affect M. L.'s statement. But even when corrected, it is startling enough. How is it, one might ask, that the army in France should lose 20 in 1000, though it consists of picked men, chiefly between the ages of eighteen and thirty, while the community loses but $25\frac{1}{2}$ in 1000, with its crowds of old men and infants, and the host of the sickly to whom life has been but a long disease?

To make the paradox more striking still, we may give some advantages of the soldier over the civilian, as enumerated by our French fellow-labourer.

Each soldier, he says, costs the state 500 francs (20*l.*) a year, being far more than falls to the lot of a great part of the civil population. Hence the soldier is better fed, clothed, and lodged, than half the workmen in manufactories: he does not vegetate in an atmosphere saturated with miasmata, or filled with noxious vapours or foreign particles; but military duty is performed in the open air. The uniform, too, is a moral stimulus, giving new life to the weak and timid. Each captain is the father of a family, and his lieutenants assist him in watching over his children: one looks to the soldier's arms, linen, and bedding; another to his diet, and the management of the expenses relating to it. The soldier is admitted into an infirmary on the very first symptoms of disease; unlike the workman, we may add, who too often toils on until all hope of recovery is gone.

How comes it to pass, then, that with picked men, and with so many aids to life, the mortality among soldiers should approach so nearly to the mortality of the mass of the people? In the first place, according to M. L., the French army does not consist of such *very* select men, although not only the *gens du monde* but even the majority *de nos confrères* imagine that it does.

They think of a soldier as of a combination of agility and muscular force; while, in the military hospitals, and in the ranks too, you will find a multitude of young men, thin, pale, and blanched, with a narrow chest, and short breath; some exhausted before their time by laborious occupations, or the irregular life of great towns; others surprised by the conscription before their frame was completely developed, nature having been behind the law, and not furnishing the quantum of military strength at the legal age.

The second reason assigned by the writer in the *Gazette Médicale* is the frequent transference of troops from one part of France to another. The men are fatigued by the march; some fall ill by the way, and more are sent to hospital on their arrival. Moreover, the climate varies extremely in different parts of France; and, even in the same kind of climate, it is necessary to take into account a variety of circumstances: as, for instance, to determine what regiment will best be able to support a marshy encampment.

We certainly do not agree with the practitioner of the Val-de-Grâce, that the frequent change of quarters is pernicious; on the contrary, in spite of some of the weaklings dropping by the way, we are sure that variety of atmosphere and scenery is as enlivening for soldiers as civilians. On the other hand, when a regiment serves an unusual length of time in one place, and that spot an unpopular one, it produces absolute despair. The 9th regiment served from 1719 to 1746 at Minorca, and maiming became so prevalent among the troops stationed in the island, as to lead to a parliamentary investigation, (Marshall, p. 146-7). If, however, it so constantly happens that men are unable to continue their march, or are entirely knocked up at the end of it, the remedy is simple enough.

The third cause assigned is nostalgia. We doubt the frequency of this affection, at least among British troops; though it might sometimes be put forwards by the soldier as the pretext to conceal the deep discontent which devoured him; and even in his own heart he might mistake his dissatisfaction with the barrack for a desire to revisit his home.

Fourthly, says M. L., the diet of the French soldier is not quite sufficient, for his pay of 30 or 32 centimes (threepence) will not buy enough food. We should say that the English soldier's rations were very insufficient if they were limited to the quantity which the utilitarians assert. But if, as we quoted from Dr. Hennen on a former occasion, the soldier has one pound of meat and two pounds of bread a day, there is not much cause of complaint, though a supply of vegetables would be a desirable addition. At any rate, the 48 oz. given to the British man-at-arms, are far more than can be bought in France for 32 centimes. In moist and marshy situations, says M. L., wine should be distributed: it might be distributed here also, if our trade with France could be put on a more sensible footing.

The fifth reason is the badness of the barracks. In most French towns, the buildings in which the troops lodge were not originally intended for them; and when churches and convents are turned into barracks, it cannot be expected that they should be very healthy or commodious. As metamorphoses of this kind have seldom taken place in England, we may hope our barracks are more wholesome; but we fear that they are neither sufficiently spacious, nor well ventilated.

The sixth cause of the excess of mortality in the French army is the management of the hospitals. First of all, the surgeons have the right of treating a certain number of cases in the regimental infirmaries, instead of sending them to the

general hospital; and this, it seems, is disadvantageous to the patients, who in their *chambrées*, or roomfuls, sometimes escape notice. In the hospitals again, as in the barracks, the beds are crowded, and infectious diseases are placed indiscriminately among the others.—Convalescent establishments, too, are wanting.

Such, says our philanthropic colleague, are some of the causes which concur to produce the mortality of the army; there are many others, the examination of which would perhaps lead him to delicate questions.

Now, it strikes us that the real solution of the problem lies among the delicate questions; and that those which are discussed by the physician of the Val-de-Grâce, do not clear up a tenth part of the difficulty. Crowded hospitals and scanty rations are evils which diminish the probability of life; they are evils which might and ought to be corrected; but, after all, the soldier's diet is better than the labourer's, by the original supposition; nay, add all the other causes expounded in our contemporary, and the sum total will yet be insufficient.

The true explanation is, that man is not a machine, but that military discipline tries to make him one. For the soldier, the delights of domestic life scarcely exist; and he finds, to his cost, that four walls and a roof do not make a home. When to this moral depression, we add the forced servitude of years, perhaps without a limit, we shall understand the despair which makes the soldier mutilate himself; we shall almost comprehend why "the ratio of cases of self-murder among the cavalry branch of the service has been found to amount for a series of years to one suicide out of twenty deaths."—(Marshall, p. 141.)

Let us, therefore, improve the soldier's condition; let us enlarge his barracks and increase his rations; let us mitigate

the torture still inflicted under the name of flogging; and let us enlist recruits only for a term of years.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

April 7, 1840.

SIR B. C. BRODIE, Bart. in the Chair.

Identity of puerperal peritonitis with epidemic erysipelas.

A PAPER was read, transmitted by Sir James Clark, written by R. Hutchinson, M.D., M.R.C.S., Physician to the General Hospital, Nottingham, of which the object was to state some circumstances tending to prove the frequent identity of puerperal peritonitis with epidemic erysipelas, and which occurred during a recent epidemic at Nottingham.

After excluding phlebitis and metritis, which the author considers to be by some authors comprised under the name of puerperal fever, and of which the imperfect discrimination he thinks may have introduced much of the obscurity and contradiction in the accounts and opinions of medical writers on puerperal fever, the conditions of the weather preceding the epidemic are stated, and the fact of coincident prevalence of erysipelas and puerperal fever in the same neighbourhood, and at the same time, is stated. A case is then related at length, which the author judged to be a case of puerperal peritonitis. It terminated fatally, but no anatomical inspection of the body was made.

Another case follows, also fatal, in which the peritoneal inflammation, with the effusions usually described in puerperal peritonitis, were ascertained on dissection.

A third case shews the occurrence in the same individual of peritoneal inflammation after delivery, and of erysipelas beginning in the left labium pudendi, and extending over large surfaces of the body with vesications and sloughing of cellular substance. The treatment is detailed, under which the patient ultimately recovered.

These cases all occurred consecutively, without intervention of any other attendance on a case of labour, in the practice of the same accoucheur, and were followed by other distinct cases of puerperal peritonitis, one of which, attended by the author of the paper, in company with the same practitioner, exhibited repeated alternations of peritonitis and erysipelas on the surface.

The author then states that two practitioners, residing ten miles apart, met half way from the residence of each in attend-

ance upon a patient suffering under extensive erysipelas of the legs, with sloughing which required incisions to be made, in which both were engaged in handling the parts affected. One of them, the same evening, attended a patient, previously healthy, who died of puerperal peritonitis. The other, during the two following days, attended three cases of midwifery, in all of which death followed from puerperal peritonitis. The author draws from these observations a serious caution to practitioners of the danger of communicating infection. He mentions, among other writers who entertained views similar to his own respecting the identity of puerperal peritonitis and erysipelas, Mr. Ingleby, of Birmingham, who, in the *Edin. Medical and Surgical Journal*, 1838, speaks confidently of his conviction on the subject.

ASSOCIATION OF PHYSICIANS, DUBLIN.

At a meeting of the Association, April 6th, Dr. Robert Collins, president, in the chair, the Secretary, Dr. Thomas Brady, said he supposed the members had all seen a report in the newspapers, of a trial of a private in the 38th regiment, Andrew Hume, at the last assizes of Kenagh, for the murder of a female infant, only 11 months old, in an attempt to violate its person.—The prisoner was convicted and sentenced to death. In the published account, the chief part of the medical evidence was suppressed, but the case being of great interest in a medico legal point of view, he had written to the medical witness, surgeon Kingsley, of Templemore, and through his courtesy was enabled to lay before the association the most important facts connected with it.

On the march of the regiment from Rosena to Templemore, Hume, who was with the sick car, took the child from its mother, Mary Hall, to carry it some way for her. Hall is the wife of a soldier in the same regiment, and had not known Hume before that day. The child was quite well when he got it; he walked on quickly, and was out of her sight for half an hour. When she came up with him, he had the child standing on the grass facing him, and he was bent over it: with one hand he held the child's petticoats up, and his other hand was covered with blood. He said, Mrs. Hall, your child is very bad, it is passing blood. She took it up, rolled it in her shawl, and in this way carried it till they reached Templemore, when she went to an apothecary, where, however, no examination was made, and it was not till the

next morning that in washing the child the marks of violence were seen. This is the substance of the mother's evidence, which was uncontradicted.

When Mr. Kingsley saw the child for the first time, twenty hours from the time the outrage was committed, it was in a state of complete collapse, and in fact, died in a few hours afterwards.

On examination he found all the external parts of generation in a torn state, and violently inflamed; the perineum was torn nearly quite through; the nymphæ, and the mucous lining of the labia and clitoris, were likewise lacerated, so that the whole presented the appearance of a large lacerated wound in a high state of inflammation.

After death, besides the above, the vagina was found greatly dilated and torn from its attachment to the neck of the uterus posteriorly, making a large opening into the cavity of the abdomen, in which a quantity of bloody serum was effused.

The secretary then read a long and interesting paper from Sir Francis Smith, M.D., of Paris, a corresponding member of the association; but as it was sent for publication in the Dublin Medical Journal, we will not give at present any more detailed account of it here.

After which Dr. Churchill read a paper on the effects of parturition on the nervous system of the mother.

[The paper alluded to we shall give next week.]

GLANDERS.

To the Editor of the Medical Gazette.

SIR,

Your correspondent, Mr. Brush (at the conclusion of his case of glanders, reported in the GAZETTE of this day), seems to express a doubt whether that complaint can be communicated from one human subject to another. If he refers to the Lancet for 1831-32, vol. i. p. 698, he will find a case, occurring in Ireland, in which a father caught it whilst nursing his son, and both died. If he refers, also, to Travers on Constitutional Irritation, pp. 398 and 408, he will see that the glanders has more than once been communicated to animals by inoculation from the human subject. I hope that he will send to your journal the case of the nurse whom he suspects to have been inoculated, as soon as the symptoms become decided.—I am, sir,

Your obedient servant,

R. D.

Bruton-Street, April 11, 1840.

JACKSONIAN PRIZE.

THE Jacksonian prize for the present year has been awarded to Mr. Rutherford Alcock for his essay on Injuries of the Brain. Our readers may remember the appearance of Mr. Alcock's papers in this journal, in which they were originally published. His views are directly opposite to the doctrines hitherto taught, and are calculated to change both the diagnosis and treatment of such cases. We presume, from his obtaining the prize, that the Council regard his opinions as founded on accurate observation and reasoning.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, April 2.

J. B. Ayre.—G. H. Whimper, Tillingham.—S. J. Burch, Stowmarket.—A. G. Roper.—T. Gray, Louth, Lincolnshire.—T. W. Mann, Holloway.—R. D. Larke, Brooke, Norfolk.

WEEKLY ACCOUNT OF BURIALS.

From BILLS of MORTALITY, April 7, 1840.

Age and Debility . . .	41	Whooping Cough . . .	8
Apoplexy . . .	10	Inflammation . . .	16
Asthma . . .	10	Bowels & Stomach . . .	4
Cancer . . .	1	Brain . . .	3
Childbirth . . .	1	Lungs and Pleura . . .	12
Consumption . . .	40	Jaundice . . .	1
Convulsions . . .	22	Measles . . .	2
Croup . . .	3	Mortification . . .	2
Dentition . . .	6	Paralysis . . .	2
Diabetes . . .	1	Rheumatism . . .	2
Dropsy . . .	5	Small-pox . . .	1
Dropsy in the Brain . . .	8	Sore Throat & Quinsy . . .	2
Dropsy in the Chest . . .	1	Stone & Gravel . . .	1
Fever . . .	12	Thrush . . .	1
Fever, Scarlet . . .	5	Tumor . . .	1
Fever, Typhus . . .	2	Unknown Causes . . .	65
Hæmorrhage . . .	1		
Heart, diseased . . .	2	Casualties . . .	9

Increase of Burials, as compared with the preceding week . . . } 24

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

April.	Thermometer	Barometer
Wednesday 8	from 35 to 46	29.89 to 30.04
Thursday . . 9	30 50	30.11 30.22
Friday . . 10	25 55	30.25 30.20
Saturday . . 11	27 59	30.14 30.04
Sunday . . 12	33 57	29.99 29.95
Monday . . 13	25 63	29.88 29.79
Tuesday . . 14	29 63	29.74 29.79

Wind N. on the 9th and following day; S.W. on the 11th; S. on the 12th; N. on the 13th and morning of the 14th; S.E. on the afternoon of the 14th.

On the 9th generally cloudy; a little rain fell during the morning. Morning of the 10th cloudy, otherwise clear. The mornings of the 11th and 12th foggy; since generally clear.

Rain fallen, .1485 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, APRIL 24, 1840.

LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISEASES OF VEINS.

*General Remarks—Symptoms—Treatment.—
INFLAMMATION OR PHLEBITIS—Charac-
ters—Local Signs—General Symptoms—
Treatment.—AIR IN VEINS.*

THE structure of veins differs from arteries in more than one respect: their parietes are thinner and more flaccid; they are deprived of the fibrous tissue which gives to the arteries their elasticity, their form, and their aspect. They are composed of only two distinct tunics; the one, external, fibro-cellular, firmer, more resistant, yet very extensible, composed of longitudinal fibres, to which the veins owe their solidity; the other, internal, very thin, very smooth, polished, fragile, but more cellular than that of the arteries, forms, by its duplicatures, the valves which belong exclusively to this order of blood-vessels. It is sufficient to recollect the precautions which we are obliged to take in blood-letting, to feel that venous hæmorrhages may be spontaneously arrested; and the consequences of this operation prove that veins are not obliterated in this process.

The experiments of Travers on this subject are interesting and important. When we prick a vein through which blood circulates, a very little blood escapes, and the wound is soon cicatrized. If an incision of trifling extent be made, the result is similar, except, in some cases, when there is a slight interval between the lips of the wound, and a small quantity of

blood escapes; this may flow to the surface when the vein is superficial, or may infiltrate the adjoining tissues, if it be deep seated: in this case the cicatrix is more apparent than in the former, though still linear. But, if the wound be large, the fluid escapes, at first, abundantly; after a certain time a clot is formed in the opening, which it obliterates, whilst a certain quantity of extravasated blood passes into the cellular sheath, and coagulates, so as to constitute an external clot surrounding the vessel. At the end of twenty-four hours the lips of the wound, which has taken an oval form, are everted, and adhere to the clot without being red, and apparently without secreting coagulable lymph. In a short time a membranous expansion unites the clot to the vessel, the clot becomes soon organized, so that in twelve days, with the aid of a lens, blood-vessels can be discovered ramifying in it. If we make a transverse section of a vein, the blood escapes in a considerable quantity, and, if more than half the circumference be implicated, it is not easy to arrest the hæmorrhage; the blood escapes rapidly into the cellular sheath of the vessel, and into the surrounding tissues, and forms a clot which is interposed between the opening of the vein and the external wound; but the circumstances of cicatrization are the same as in arteries. In all cases the extent of clot which blocks up the opening is proportioned to the gaping of the wound. These remarks apply to the cicatrization of wounds such as result from venesection either in man or the horse. Thus, according to Travers, that which characterizes the cicatrization in wounds of veins, and distinguishes it from the mode of cicatrization in wounds of arteries, is, that wounds of veins, when the edges are in contact, heal by first intention; at first, by means of a clot which forms between the lips of the wound, without projecting into the cavity of the vessel, and afterwards by

means of a membrane which becomes organized. During this period the only trace of inflammation is the tumefaction of the lips of the wound within the vessel. My own opinion differs from that of Travers: I readily admit that venous parietes exhibit no very marked disposition to secrete lymph; still I have no question that lymph is secreted, and is the ultimate bond of union; that the membrane, described by Travers as at first connecting the clot with the lips of the wound, and afterwards stretching across, is the result of the transformation of lymph.

Travers has made experiments on the ligature of veins, from which it resulted that the internal tunic is not divided by the action of the ligature, but that it left a circular mark which some persons had mistaken for a solution of continuity. The external alone appeared to be cut. The part of the vessel nearest to the heart becomes completely empty, the opposite part is distended, the fluid coagulates for a considerable distance, and the coagulum becomes adherent to the venous parietes. Externally, around the ligature, lymph is deposited, and the surrounding tissue is infiltrated with the same fluid. Towards the ninth day the venous tunics begin to change, and, from the fifteenth to the twenty-fifth day, the ligature is detached, the extremities of the vessel are retracted, and an interval exists between them. In a young horse the ligature was not detached before the twenty-fifth day; and Travers ascertained that the extremities of the vein had not suffered any other contraction than that which resulted from the action of the ligature. The internal tunic was examined, the clots were carefully removed, and no thickening of the parietes or any vestige of inflammation was discovered in any part of the vein. According to Liston, no adhesion takes place until the ligature has produced ulceration, and then the canal may become obliterated.

Veins, being more superficial and less protected than arteries, are more frequently wounded; but the hæmorrhage consequent upon such wounds has not occupied much attention, though occasionally the consequences are most serious; especially when a large vein is about to penetrate into a splanchnic cavity; it may even be more dangerous than the wound of the principal artery of a limb, because, if the blood continue to flow, the patient may die from loss of blood; and if, to suspend it, the section of the vessel be completed, the patient may die from mortification, in consequence of blocking up the only way by which it could return.

Venous hæmorrhage is recognized by the following characters:—the blood is dark; it wells out, or by a feeble jet; the

quantity increases if the muscles of the limb be contracted; if we compress the vein between its radicles and the wound, the hæmorrhage is arrested; it is increased if pressure be made between the wound and the heart. When it is a question of a principal vein of a limb, or of one of the cavities, death may be the consequence of the loss of blood. Certain diseases of veins cause the accumulation of so large a quantity of blood, that when they are opened very abundant and dangerous hæmorrhage is the consequence. Many cases are on record of fatal hæmorrhage following the bursting of varicose veins. Although these may not strictly be called cases of traumatic venous hæmorrhage, yet a wound inflicted upon such a vein might, I apprehend, produce similar results.

Treatment.—The means proposed for arresting venous hæmorrhage are less varied than those employed in wounds of arteries. The most important condition to fulfil is to ascertain the cause. The depending position of the part increases the lateral efforts of the column of blood, and is a cause of the continuance of a hæmorrhage. It is, therefore, of the highest importance to ascertain whether respiration, position, or other circumstance, tends to keep it up. It is always wise to attempt to preserve the canal of the vessel, and this is often done when compression alone is sufficient to restrain the hæmorrhage. The application of the compresses in the common operation of bleeding at the bend of the arm is a proof of that. If compression be not applicable or effectual, and the wound is very narrow, an attempt may be made to get hold of the vein with a tenaculum, passing it through the lips of the wound, placing a ligature around that point, and thus preserving, as far as practicable, the continuity of the canal. At the same time the cure must be assisted by the position of the part, which, by facilitating the passage of the blood, diminishes its lateral pressure, and lessens the tendency to escape. When a vein is completely cut through, it cannot continue to be a channel of communication; it is, therefore, proper to attempt to obliterate it. Sufficiently energetic compression may be applied to the part; and if that do not suffice, each end may be included in a ligature. It not unfrequently happens, after amputation of the lower limb, that a vein continues to pour out blood upon the surface of the lymph: in this case the ligature is necessary, which, if the patient be in moderately good health, may be a less dangerous means than was supposed by Travers; still it is not an operation which should be heedlessly performed, because the occurrence of phlebitis after it has unhappily been but too frequent.

PHLEBITIS.

Injuries of veins may be followed by inflammation of those canals, which is an extremely grave disease, the symptoms of which Aretæus briefly pointed out. This subject has occupied a very large portion of the attention of medical men since the time of John Hunter. In examining the bodies of two horses which had died suddenly, after bleeding, he found the internal surface of the veins inflamed. Having occasion to open many abscesses, occurring in a man who had been bled at the bend of the arm, he found that they were developed in the course of the venous trunks, but that pus was also contained within the veins. In another case, a person, having died on the eighth day after bleeding, he found the internal surface of the vein covered with lymph. It is also developed after parturition, excision, and ligature of varices, amputation, lithotomy, &c. To be well acquainted with the ordinary characters of phlebitis, it should be observed after bleeding. Some hours after the operation, a prickling sensation is felt at the puncture, soon it amounts to pain, the little wound gapes, its lips are slightly tumefied, and sanies or sanious pus escapes from it. If all should go on well, this gradually subsides, and, by the seventh or eighth day, all is dissipated. If, on the contrary, the disease proceed, pain is manifested along the vein, it soon becomes tense, and swelling extends to the whole limb. If the vein be superficial or projecting, the skin is reddened along its course, the pain and tension increase, the course of adjacent veins is marked by a redness of the skin over them, the tumefaction increases, becomes œdematous, the inflammatory action extends towards the heart, the vein appears like a hard knotted cord; motion of the limb is then painful and difficult, the cord becomes thicker, abscesses are sometimes formed around it, and erysipelatous redness is occasionally intense. But too often it happens that pus finds its way to the viscera, and the symptoms become very urgent. Severe rigors, sometimes continuing for hours, are felt, the skin becomes pale or yellow, and there is rarely much re-action. After two or three paroxysms, typhoid symptoms are commonly developed. The eyes look hollow, the conjunctiva yellow; the tongue, which continues moist, is not deeply coated until the later stages of the disease; the teeth and lips become fuliginous, the pulse, at first hard and frequent, becomes small and feeble, tympanitis, or diarrhœa, rarely delirium, supervenes, though there is a good deal of stupor. In some cases there are vague indications of visceral inflammation. Sometimes there is a livid spot

on each cheek, short frequent cough, pain in the chest, and difficult respiration; sometimes icterus, with pain over the liver, or in the right shoulder; sometimes vomiting and gastric irritation; and the breath is very fetid, yielding a purulent odour. Cicatrization of the wound is suspended; suppuration becomes greyish, or even entirely suppressed, and the subject dies exhausted in two, three, four, or five weeks. The post-mortem inspection reveals two species of lesion; those belonging to the vein or veins themselves, and those which are a consequence of phlebitis. We see the vein transformed into a reddish cord; the cellular tissue connected with it is infiltrated with a sero-purulent fluid: the redness and vascularity of the external tunic is very decided, and very characteristic. The interior of the vessel may contain blood or pus, the inflammation may produce obliteration by means of the clot, the pus may be limited by a clot, the vein may be perforated, or the pus may circulate with the blood. In the latter case, a large number of visceral abscesses are produced.

The consequences of phlebitis had been greatly discussed at a much earlier period, but the disease which gave rise to those alarming symptoms, the consequence of "purulent absorption," was comparatively unknown; and even when ideas on the subject were becoming more defined, a great struggle took place between the partisans of phlebitis and those of purulent absorption. The difference between the doctrines was not great: both started from the same point, a wound or operation—both admit a change in the blood—both maintain that this alteration proceeds from the admixture of pus with the blood; their difference consists simply as to the manner in which the pus gets access to the blood. The doctrine of phlebitis implies a direct passage—an immediate admixture. The doctrine of purulent absorption maintains that the passage is indirect, and the admixture consecutive.

In the Transactions of a Society for the Improvement, &c. (1793) are the ingenious experiments of Hunter on the subject of phlebitis. He considered not only the local effects of inflammation upon the internal tunic of veins, but also the general effects.

Phlebitis belongs at the same time to medicine and surgery; there may be a traumatic phlebitis, and a spontaneous phlebitis. The first effect of all phlebitis is to produce coagulation of the blood, and adhesion of the clot to the parietes of the vessel. This is observed whether the affection be traumatic or spontaneous. From the interruption of the circulation in an inflamed vein results the stagnation of the venous blood, and the effusion into the ad-

joining tissues of a certain quantity of serosity. Phlegmasia dolens after parturition, as well as after phlebotomy, may be considered as a characteristic sign of phlebitis; and this œdema is usually proportioned to the derangement of the venous circulation of which it is a consequence. Besides the œdema, phlebitis is characterised by the presence of a hard, painful cord, easily circumscribed, and following exactly the course of the vein. The greater number of cases of phlebitis, even when left to themselves, do not pass that limit which has for result the coagulation of the blood, and its adhesion to the parietes of the vessel. This may be termed *adhesive phlebitis*, and this happens as often as veins are cut through.

Adhesive phlebitis is a simple unimportant disease, and its effects are limited to the affected point. Gradually the serum contained in the clot is absorbed; then the colouring matter; and only the uncoloured fibrine remains. Sometimes this becomes organised; sometimes it is entirely removed; but in both cases the vein is obliterated. Now and then it happens that a canal is formed in the centre of the clot, and the blood circulates through it. The formation of compact adherent clots occasions no inconvenience, and does not even manifest its existence, unless it occupy a certain extent, and interrupt, to a greater or less extent, the circulation of corresponding parts. Thus, phlebitis of the sinuses of the dura mater is necessarily mortal in this first period, because the venous circulation of the brain is more or less completely intercepted. Phlebitis of the femoral vein, or the external iliac, produces œdema of the limb, and may occasion gangrene.

Suppurative phlebitis is, in its first stage, similar to *adhesive*. An adherent clot is the first stage, suppuration is the second. There are conditions, which cannot be clearly defined, under which a tendency to suppurative phlebitis is determined, whatever care may have been bestowed on the case; there are others, in which it seems to be the consequence of improper treatment. Certain miasmatic or individual peculiarities seem to determine it; among these are the causes which favour hospital gangrene, or typhus. Some persons, however, believe the typhus, in these cases, to be a consequence of the presence of pus in the veins.

Though very intense, if properly treated, adhesive does not often end in suppurative phlebitis. A great cause of this termination is an improper interference with wounds—with parts already inflamed. Attempts, for instance, made day after day to remove a sequestrum or a spicula of bone; or the plugging up of a wound to arrest secondary hæmorrhage.

Local signs.—The local signs of suppuration in veins are, first, when slight, red patches apparent on the inner surface of the vein; when more intense, instead of being thus marbled, it is uniformly red; it is thickened so that, when a section is made, the vessel remains open. The internal surface is sometimes smooth, sometimes unequal or ulcerated. In the arm, two days after bleeding, I have known the veins to look fleshy, and much thickened, their interior filled with pus, which is deposited not between the vein and the clot, but at the centre of the clot; and, by some persons, it is believed to be a change which the clot itself undergoes—first it is grumous, then sanious, then whitish, opaque, phlegmonous. This presence of pus at the centre of the clot, Cruveilhier believes to be a phenomenon of capillarity; that, like a false membrane, the clot serves as a filter, through which the pus passes. Sometimes this apparent suppuration is no doubt a softening of the fibrine itself. Suppurative phlebitis may not pass beyond this stage, and its existence may not be manifested by any symptom. If it proceed farther the coagulum diminishes, and the pus augments. Soon the vein is filled—distended with the fluid; but it is rarely that pus occupies uninterruptedly a large extent of the vein—the inflammation, varying in intensity, at one point may be adhesive, at another suppurative. Other circumstances occur. If the disease continue to be local, the vein is distended, knotted; this distension may be so great as to give rise to the idea of abscess: the venous parietes may give way, the pus be effused into the surrounding tissues, constituting abscess, and opening externally, the vein being destroyed to some extent, and not easily discovered.

It is well to distinguish between inflammation affecting the internal tunics of a vein, and that of the external or cellular; often they coincide, sometimes they may occur isolatedly. Rarely does inflammation of the cellular tunic end in suppuration; still there are examples of it. When suppurative phlebitis is limited by adhesive phlebitis, only local phenomena are manifested; that portion of the vein in which the pus exists is cut off from the general circulation. Among other examples of this we may mention the following:—Soon after parturition, a woman had phlebitis of one of the superficial mammary veins. It was hard, cord-like, and painful, extending from the external to the internal margin of the gland, a little above the nipple. A fluctuating point was presented, it was opened, and the vein was completely emptied; the projection which it had formed being succeeded by a groove. In fact, whatever extent of a vein may be affected by suppuration, provided it be limited by adhesive in-

flammation, local accidents alone will be presented.

This pus may be absorbed, as in any ordinary collection, and carried off by ordinary means; it may distend and thin the vein so as to allow of its destruction, and so cause abscess, which may be mistaken for common abscess: but as soon as the barrier formed by the clot is broken down, and the pus is mixed with the circulating blood, typhoid symptoms are immediately manifested, preceded by intense rigors, and soon followed by death. Frequently we find in a morning the condition of a patient desperate, whom we had left pretty well the preceding evening.

If we examine the internal surface of a vein at different periods of phlebitis, we never find upon its surface the ordinary traces of inflammation, that is to say, injection of the capillaries; the red colour, which is seen, looks more like the effect of imbibition—probably a post-mortem result, and only seen in the first stage. As the colouring matter of the clot is absorbed, the red colour of the surface of the inner tunie diminishes, and is entirely absent when pus exists in contact with it. It is important to carry this in our mind, because it is upon the absence of these signs of inflammation that the principal argument of those persons is based, who maintain that the pus found in a vein has not been formed there, but in some other part of the system, from whence it has been brought by absorption: but we cannot forget that there are membranes which are not susceptible of injection, neither in the healthy nor morbid condition; such are the serous membranes, the cellular tissue, and the internal membranes of veins. In the absence of an adherent clot, and of pus in a vein, it is by the vascularity of the external tunie, the cohesion and fragility of the external cellular tissue where lymph has been deposited, that we discover traces of venous inflammation.

General symptoms.—The general symptoms of phlebitis, as we have seen, are those which are usually attributed to purulent absorption; namely, extremely marked typhoid symptoms, under which the patient sinks with more or less rapidity. Upon examination after death, we find circumscribed purulent collections in the lungs, liver, spleen, brain, muscles, synovial and serous cavities; and, what is most singular, often unaccompanied by any local appreciable sign in the affected organ. Now, what happens here? Is there a development of preexisting tubercles? Is there purulent absorption—pus being taken up, as pus, from the surface of a wound, and deposited in different organs? or, Does the presence of these collections presuppose the existence of suppurative phlebitis in some other

part of the economy, a consecutive phlebitis being developed at the point where the abscess is found?

The first inquirers who sought to discover the cause of death after great surgical operations, have pointed out the existence of internal abscesses in the principal viscera, particularly in the lungs and the liver. Modern inquirers having observed the frequency and the gravity of these lesions, did not hesitate to ascribe to these causes the frequency of death; and whilst the surgeons of the last century continued to observe the wound, and exclusively sought, in the different appearances of the wound, the explanation of all the circumstances which succeed in the course of treatment, the better educated men of the present day, studying the local as well as the general condition, see in the different qualities of the pus, its quantity, and the colour of the integuments, a pretty certain index of the state of the viscera.

It is very difficult to explain visceral abscesses as a consequence of surgical operations, though operations are often performed on persons whose general health is good, and in whom we cannot admit that visceral lesions, so grave as those we meet with, can have existed before the operation. Still as, on the one hand, observation shews that a great many organic lesions may exist in a latent state; and as, on the other hand, visceral abscesses, consequences of wounds, present by their multiplicity, their seat, and other circumstances, a great analogy with suppurating tubercles, many persons have maintained that these abscesses were no other than the result of the development of pre-existing tubercles. If this theory ought not to be adopted as a general rule, neither should it be repulsed in all cases. Our own opinion is, that it should not be admitted as a general rule: unquestionably, in most cases, around these abscesses phlegmonous inflammation may be detected, without tubercles or tubercular infiltration.

Visceral abscesses being generally consecutive to wounds, it was natural to admit between them a relation of cause and effect; the question to consider is, how a wound which suppurates, determines purulent collections in the lungs, the liver, and so on? The first idea which was adopted was a pure and simple transport of pus from the wound into the viscus, or metastasis. This doctrine was supported on the following grounds:—The diminution or suppression of external suppuration, which is the constant prelude to the formation of internal abscess, the absolute identity of the pus on the surface of the wound, and that in the abscess, the absence of general and local symptoms to indicate visceral inflam-

mation; the rapidity with which these abscesses are formed; the presence of pus in the veins, and in the right cavities of the heart, in the midst of coagula. If we admit this doctrine, we must go a step farther, and ask, how is the pus conveyed from the wound to the heart? Reasoning rather than facts has been used to answer that question. The veins, it is said, absorb and convey it; the lymphatics have, it is said, performed the same office; and some persons believe that both participate in it. Velpeau, Marechal, and Legallois, admit, that pus secreted in the substance or upon the surface of the body may be absorbed, circulate with the blood, and be deposited in the substance of this or that organ, without previous inflammation of that organ. The facts they invoke in support of their opinion are undeniable as facts; what we object to is their mode of interpreting them. They have seen pus in the veins, in the right cavities of the heart, in the midst of clots of blood, in the lymphatics; others have done so too, and even in the lungs, liver, brain, spleen, muscles, synovial cavities, without any traces of surrounding inflammation. But this pus, so observed, may it not be formed at the point where it is found? May not the pus in a viscus be a consequence of circumscribed inflammation of that viscus? The diminution of secretion on the surface of a wound, may it not be the effect rather than the cause of the internal lesion? Unquestionably that would be the most rational interpretation: such was the opinion of Quesnay, Morgagni, and Dance.

The reasons which appear to us to favour the opinion that the pus is formed at the place where it appears are, that the formation of visceral abscesses is almost always accompanied by general symptoms, of a more or less grave character, which cannot be explained by the state of the wound. The absence of local symptoms in the situation of a viscus does not testify to the absence of inflammation of that viscus. Unquestionably a certain number of abscesses do not present, at the circumference of the cyst, any trace of inflammation. As to the rapidity with which the pus is formed, there is nothing astonishing in that, the duration of the disease being usually five or six days at the least.

Visceral abscesses are frequently idiopathic—formed in the substance of a viscus by inflammatory action. They are large tubercles, consequences of pneumonia or lobular hepatitis: this was Morgagni's doctrine. We must proceed further, and endeavour to ascertain the mode of formation of pus in a viscus as a consequence of wounds. Every foreign body introduced into the venous system determines, when it cannot be carried off by the emunctories,

visceral abscess in all respects similar to those which succeed to wounds or surgical operations; and these abscesses are a consequence of capillary inflammation in the organ where they are found. If we inject an irritating fluid into the femoral vein, if the collateral vessels do not carry the fluid into the circulation, (in which case death rapidly follows), at the end of thirty-six hours the limb is tumefied; and at this time, if the animal be destroyed, numerous clots will be found in the muscular and cellular tissue of the limb, and the larger veins are distended with adherent coagula. If the animal survive this period, pus or softened fibrine replaces the clots within and without the vein. If we divide the muscles, small collections of pus are seen, (it may be expressed from the small veins with great facility), and the synovial surfaces present purulent synovia.

In such cases the disorder may be local. It is important to ascertain what becomes of the pus, in local phlebitis, when it gets into the circulation; but as it is difficult (if not impossible) to recognize pus when mixed with the blood, it is necessary to give to the demonstration all the exactness of a physical experiment; to find a liquid which can always be recognized, and to follow its smallest molecules: that liquid Cruveilhier found in mercury. In whatever part of the venous system, other than the abdominal, we introduce mercury, the globules will be found in the lungs: they will not be found inflamed, but "engorged." If the animal survive some days, a reddish induration will be seen to surround each globule; at a later period, pus or tubercular matter, or a mixture of both, will constitute their circumference. Cruveilhier has even placed a single globule in the medullary canal of the femur, and a month afterwards he has found that globule in the lung, divided into many smaller globules, each being the centre of a tubercular abscess. Similar phenomena have been observed in the liver, as a consequence of a similar injection into the abdominal venous system. From these experiments, it results that the lungs are for the general venous system, and the liver for the abdominal system, an outlet for foreign bodies, and a barrier which, in many cases, they cannot pass. Thus the veins do not fill only the part of conducting the blood which has circulated through the arteries back to the heart, but they seem also to be capable of absorbing foreign bodies.

Those experiments to which we have referred assist in the solution of another difficulty. How does the pus get from the general into the portal venous system? This pus cannot be arrested in the lung like mercury, but passes in larger or

smaller quantity through the whole venous system: and we are justified in stating that pus, circulating with the blood, creates its peculiar irritation in every organ; in some more than in others; more decidedly and frequently in the lung than the liver or spleen. The next question to consider is, why do not these numerous abscesses supervene in those great collections of pus in the chest, the peritoneum, and in very large abscesses?—and is traumatic phlebitis necessary for their production? That great difference does exist between the consecutive effects of old purulent collections and recent traumatic suppuration, was strongly maintained by Quesnay. Why should there be absorption of pus in one case, and not in the other? Whenever a liquid susceptible of being imbibed is in contact with a suppurating surface, whether this liquid be secreted by our tissues or a foreign body, this liquid is absorbed. Absorption of pus goes on incessantly; the often-observed occurrence of the sudden disappearance of large abscesses is evidence of this. We see purulent collections in the pleura and peritoneum removed by absorption, and yet the economy is not disturbed, and the peccant matter is carried off by the emunctories. I wish you to understand that there is an enormous difference between pus which is transported by absorption into the circulation, and that which is formed in the veins. Absorption, it is probable, does not introduce the mass of purulent fluid, but successively the different elements. It seems first to remove its more liquid portion, its more solid parts are removed at a later period: but when pus is mixed immediately with the blood, it alters its crasis, embarrasses it in its course, favours concretion, is arrested in the capillaries, and determines simultaneously a number of points of inflammation. I only know three ways by which pus can be introduced into the circulation; by direct injection into veins or arteries, by attraction exercised by an open vein, by phlebitis. Now the direct injection of pus into the veins has the most serious consequences, and, if not eliminated, produces accidents analogous to those which succeed to wounds or surgical operations. A powerful attraction is, it is said, exercised by veins upon fluids in contact with their open extremities. This is the idea of Marechal, who, basing his opinions upon the experiments of Barry, maintained that pus is drawn into the open veins by the aspiration caused by expansion of the chest and dilatation of the right auricle. Certain it is, if the opening be maintained, a species of absorption does take place. The attraction can only occur during the first few hours after the first infliction of the

wound; when once the clot is formed, the absorption can no longer happen through the divided vessel, but must be effected, if at all, by the natural channels of absorption. Now I do not believe, for the reasons I have already given, that pus, in its natural state, can find its way into the general circulation through these channels. In that case, phlebitis alone would seem to be the only source of those accidents which succeed to wounds of veins. It must therefore follow, that visceral abscesses succeeding to wounds or surgical operation are a consequence of phlebitis of some part of the system; that they always present the same character, whatever may be the starting point.

I by no means admit that pus, secreted in an inflamed vein, and carried through different organs, concurs directly in this species of purulent generation, as was supposed by Dance; but I believe that pus, once mixed with the blood, is no longer pus, but an irritating foreign body. The rapidity of the formation of visceral abscess, the ordinarily perfect integrity of adjoining tissues, are not, in my opinion, decided objections against inflammation, for 48 hours is sometimes sufficient for the secretion of pus in an inflamed vein; and, on the other hand, the limitation of the pus, and the multiplicity of points where it is found, are explained by the inflammation of the capillaries. But this mode of looking at the question is not without difficulties: it would seem to be necessary that numerous visceral abscesses must always be preceded by phlebitis at some point. Now it often happens that we do not find at the same time with visceral abscess any thing more than a suppurating surface. In vain have we examined all the veins (not only those immediately around the wound, but those of other parts of the body), without finding any trace of phlebitis. In support of this view of the subject, we may take wounds of the head, which are so often accompanied with abscess of the liver; but no trace of phlebitis. Dance was the first who gave any thing like a true explanation of these abscesses of the liver, as a consequence of wound of the head: his theory is, that the deep veins are inflamed. We may readily conceive that pus, formed in the diploic veins, should arrive at the liver as well as the lungs and the whole capillary system, for the liver is not exclusively affected in wounds of the head; and if many observers have simply mentioned those of the liver, it is because, in many instances, they have been contented to examine only those viscera whose lesions have seemed to them to explain the symptoms which were present.

I have already stated that I know no

operations which more infallibly tend to the formation of visceral abscess, than those which are performed upon bones, when we frequently return to the charge. The same may be said of interference, day by day, with a wound in the soft parts. I think it ought to be established as a surgical law, that a wound in a state of acute inflammation should not be meddled with, except the necessity be urgent. Phlebitis of the superior or inferior extremities may occur with or without œdema: there is no œdema when the venous circulation is not much constrained—that is, when it occupies only superficial veins, the deep veins being free. There is œdema when the venous circulation is materially interfered with. Phlebitis with œdema, is generally termed *phlegmasia dolens*; it occurs commonly after parturition, and usually affects the lower extremities. Though often preceded by the symptoms of uterine phlebitis, it may sometimes be manifested primarily in the limb itself; commonly supervenes towards the eighth day after parturition, sometimes not until three weeks or a month afterwards. It is indicated by the presence of a hard painful cord in the course of the femoral vessels. The œdema is generally proportioned to the extent of the phlebitis, which may occupy the femoral vein alone or may implicate many others. Still there are contradictory points with regard to this subject. Cases of obliteration of the larger venous trunks—the inferior cava, for instance—have been known to occur without infiltration of the lower limbs. The fact is, I believe, that not only the large veins must be obliterated, but also the smaller ones, to produce these effects, so much facility being offered by the collateral circulation. This kind of œdema is not peculiar to lying-in women; it is sometimes spontaneous, is not unfrequently a consequence of cancer of the uterus, causing inflammation of the iliac or femoral veins. Sometimes it is seen in the arms, as a consequence of cancer of the breast. No part of this subject, however, is more interesting than purulent effusion within the joints. Are the cartilages inflamed? Is this intra-articular suppuration the result of a simple deposit of purulent molecules, or is it the result of local inflammation? Should it be confounded with rheumatismal arthritis? Is the membrane which invests the cartilages vascular in the adult? Is it susceptible of inflammation? In the absence of materials for the accurate determination of this question, I may state my opinion to be, that pus, as pus, is not deposited in those articulations.

Treatment.—With respect to treatment, it is very difficult to say how we can oppose purulent infection; theory would

seem to indicate the employment of diffusible stimuli and bark, warm applications externally, purgatives, and emetics—such as large doses of tartar emetic in the early stages of the disease, repeated blisters, energetic diuretics, calomel, to produce a fluxion upon the intestinal mucous surface; but all these means have failed, and yet, when we experiment upon brute animals, by injecting putrid substances or pus into the veins, the animal has numerous and very foetid stools, and gets well. It is certainly a fundamental fact in pathology, that the greater number of diseases occasioned by miasmatic infection direct their action upon the intestinal canal. It is, then, evident that the treatment of phlebitis should be directed to limit the disease to its first period—that of coagulation of blood; for suppuration once declared, pus once carried into the circulation, and our attempts to cure the disease will almost always be powerless. Now we arrest every day external phlebitis in consequence of bleeding, by the application of a great number of leeches in the course of the vein; and even can arrest internal phlebitis, uterine as well as other, by large evacuations of blood, local and general: but pass that period, let general symptoms begin to manifest themselves, general and local bleeding will rarely have any favourable influence. They, no doubt, remove with the blood a portion of the material cause of disease, but this material cause is incessantly reproduced; and by removing the blood, you remove a certain portion of the power of resistance or reaction. We are bound to use the remedies we have indicated, although their efficacy has not been demonstrated. Until we can invent some means of preventing the constant renewal of the poison, nature and art will, I fear, fail to lessen the ravages of this very fearful disease. When the disease takes the form of *phlegmasia dolens*, the disease is not more manageable than that which we have been considering. The treatment should be decidedly antiphlogistic: abundant local bleeding, a position such as will most facilitate the return of blood to the heart, and emollient applications, are the means which have obtained the greater number of cures. Many cases of *phlegmasia dolens* which have resisted other means, have given way to the suspension of the arm by the wrist; and similar means, such as a steep inclined plane, have seemed to produce similar effects in the inferior extremities.

AIR IN VEINS.

Various experiments made on living animals would seem to demonstrate that the injection of air into blood vessels, determines accidents which are speedily fatal.

Since the 17th century, such experiments are recorded by Morgagni, *Epist.* 5, *Sect.* 21, in support of the explanations given by him, as to the cause of sudden death in many cases, where, after death, no appreciable organic lesion was discoverable, but where there was an accumulation of acrimiferous fluid in the heart and great vessels. Wepfer appears first to have discovered that insufflation of air into the jugular of a living animal kills instantaneously. This experiment was repeated by Redi, Van-der-Heyden, and others; they also ascertained that death was as much more rapid as air was more forcibly impelled.

In all animals so destroyed, it was discovered that the ventricles or the auricles were so distended with air, that the experimenters conceived that this extreme distension had prevented the organ from contracting; in the same way that an over distended bladder loses its contractile power.

Langrish (*Physical Experiments on Brutes*, 1746,) called attention to the subject in England; and Chabert recommended it, as a mode of destroying glandered horses, without shedding blood; a practice which has been a good deal followed by veterinary surgeons. Bichat, resting his opinion upon certain of the cases mentioned by Morgagni, expressed his belief, that instead of the heart, the brain is first affected. Nysten demonstrated the error under which Bichat laboured. Now, as to the mechanism by which the introduction of air occurs, much discussion has occurred. If we expose a jugular vein, we observe in it a phenomenon of flux and reflux, isochronous with the movements of inspiration and expiration: after an incision has been made in it, a certain quantity of air may pass into the vessel, and arrive at the right cavities of the heart. At the moment of its introduction, a lapping, gurgling, or whistling noise, is heard. It is possible that the principal cause of the introduction is inspiration, because this noise is usually isochronous with inspiration, and seems in all respects to be modified by it. This may not, however, be the only cause, for sometimes those sounds are more precipitate than the motion of inspiration, and then they appear to be isochronous with the beating of the heart: in this case the diastole of the heart (the right cavities) and more especially of the right ventricle, concur with the dilatation of the chest to produce the effect.

When death has been brought about by these means, we find, usually, a large quantity of air in the right cavities of the heart and in the pulmonary artery. Occasionally the distension of the heart is so great, that the cavities are three times their ordinary

volume: sometimes a certain quantity of air is found in the left cavities of the heart, sometimes in the vessels of the brain. The fact of death occurring with extreme rapidity is rarely witnessed: brute animals will often continue to respire regularly and quietly for many minutes after the opening is made into the vein, and even after a blowpipe is introduced. Usually at some period not commonly exceeding ten minutes, the respiration and circulation become embarrassed, become more frequent, the animal power diminishes, anxiety and agitation are manifested; but even at this time, if we conclude the experiment, the animal soon becomes relieved, and often completely recovers: if, however, the experiment be continued, the respiration becomes more and more laboured, the animal becomes more and more feeble, the sphincters are relaxed, convulsions come on, and death.

The rapidity with which death follows the introduction, seems to vary with the animal, the size, the species, his previous health, his position during experiment, the quality of the air, the quantity, and the promptitude with which it is introduced. Usually the contrast is very great between the extreme rapidity with which death follows, when insufflation is employed, and the comparative slowness by which it is brought about when air is spontaneously introduced. A dog may be killed by a single insufflation in half a minute to a minute: a horse may be killed in five or six minutes, by two or three. Whether this be owing to the force with which the air is propelled, the quantity which may be thus injected, or the quality of the air thus introduced, it is not easy to decide. As to the quantity necessary for the destruction of an animal, the only approximate evidence I know is that furnished by M. Barthélemy, who says, if we push, by a single jet, into the jugular of a horse, seven pints of air, we destroy him in a space of time varying from four to nine minutes. And those furnished by Nysten, from his experiments on dogs, shew that if only a moderate quantity of air be injected, the animal promptly recovers, but if we inject from 70 to 90 cubic inches, death follows with more or less rapidity. Proceeding upon these data, M. Barthélemy concludes, that about thirty ounces of air quickly introduced would be sufficient to destroy a man.

The principal causes of death seem to me to be, the enormous distension of the right cavities of the heart, which prevents the contraction of that organ; the presence of air in the pulmonary artery and in the lungs, rendering the blood viscous, spumous, and unfit to circulate in the pulmonary capillaries; and when the air gets

into the venous system of the brain, possibly the pressure upon that organ.

In the experiments made upon animals, certain means of relieving this condition have been tried: compression of the chest has not seemed to prevent the introduction of air. Nysten thought differently; certainly, by a sudden and forcible compression of the chest and the abdomen, a certain quantity of blood mixed with air may be forced out through the wound; and the aspiration of a syringe, whose pipe is introduced into the vein, may bring out a similar fluid; but we attach no great efficacy to either or both these means.

In applying this evidence of the action of air introduced into the veins of brute animals, to man, we should be very circumspect; because rigorously speaking, the physiological conditions are not the same. Still there are certain applications and inductions which may be legitimately employed. I believe we are justified, upon the faith of the evidence to which we have referred, in concluding from the most pressing induction, that air may be introduced into the large veins, cut during operations practised upon man, in the vicinity of the superior part of the thorax; and maintained open, either by reason of a morbid condition of the tissues, or by any other mechanical or physical cause. Not only is the thing possible, but unfortunately it has been realized in at least half a dozen cases. I might mention nearly forty in which this accident is said to be the cause of death; but to my mind they appear inconclusive. Probably, doubts might be entertained by some persons, with regard to even three of those six, for they are wanting in certain circumstances necessary for inducing conviction.

Of those three cases, one occurred to Beauchesne, one to Dupuytren, one to Castara. In July, 1818, Beauchesne was in the act of removing a tumor from the right shoulder; in cutting through the clavicle, a whistling noise was heard, and the patient died in half an hour from the commencement of the operation. Upon examination, the jugular was found to be cut, the cavities of the heart were empty, the veins of the brain, the aorta, the crural arteries, the inferior cava, contained bubbles of air. Dupuytren, in 1822, was removing a tumor from the superior and lateral part of the neck, when a whistling sound like that of air rushing into a vacuum was heard, and in a few minutes the patient died, having lost very little blood. The right auricle was distended with air. Through the arteries and veins of the trunk, the extremities, and the brain, air was disseminated. Castara, in 1826, while removing a tumor of the right shoulder, and cutting near the axilla, heard a gurgling noise: the

young man became insensible, made two deep inspirations, and died. The right cavities of the heart were distended, the left contained some air; the superior cava and subclavian also contained much of the same fluid. As to the rapidity of death in certain cases, I am bound to admit, that it is not easily explained, for in brute animals air may be passing in for ten minutes or a quarter of an hour without seriously compromising life. To explain so great a difference, it is necessary to suppose either that air acts much more deleteriously upon man than upon brute animals—indeed this would seem to be almost demonstrated—or that the state of exhaustion, in which patients undergoing operation are often found, either from loss of blood or the pain and reaction upon the nervous system, powerfully second the action of the air. Again, the vertical position commonly preserved during operation, may aggravate accidents: nor must we forget that the moral impression produced upon persons under operation, during the time the air is passing in, is an element which should not be neglected in explaining the rapidity with which death occurs.

It is of course a primary and necessary condition, that for the spontaneous penetration of air into the venous system, that tension and dilatation of veins, of a medium calibre, should exist; without this, atmospheric pressure would bring the parietes of the vessel in contact, and the introduction of air into its cavity would be prevented. Now the permanent dilatation of a vein may result from abnormal adhesions by which the vessel is maintained open, or from the hypertrophy of the vascular parietes, which destroys the natural flexibility of the venous tissues. Independently of these causes, accidental in their nature, there are others which are natural and constant. The principal branches of the superior cava, in the vicinity of the heart, have, for the most part, with the different aponeurotic laminae of the cervical region, connections, so that the parietes of these vessels are constantly maintained in a certain degree of tension; and these veins thus form canals which have greater tendency to remain dilated than to collapse. It is, therefore, very necessary to study this anatomical disposition, in consequence of the particular influence which it should exercise upon surgical operations practised at the upper part of the thorax.

If unfortunately the accident should arise, the first step to be taken is to cover the extremity of the vein with the finger, and bring the parts together so as to prevent a further ingress. The other means to be employed are such as should be used in ordinary syncope, but they should be employed energetically and perseveringly.

We cannot rely upon compression of the chest, as suggested by Amussat; nor compression of the abdomen, as recommended by Nysten: we cannot squeeze out the air which has been admitted; neither can I see a case in which it is at all probable you will be able to do what was recommended by Magendie—introduce the tube of a syringe into the wounded vein, and by aspiration remove the air which may be contained in the heart. It is a subject of great difficulty, upon which much time and experiment is necessary; at present, we may say, "*Multa enim pendenda sunt, antequam bene ponas.*"

LECTURES

ON THE

ALTERATIONS OF THE BLOOD.

BY M. ANDRAL.

General and preliminary observations—Importance of attending to the state of the blood—Nature of the alteration which this fluid undergoes—Such change affects its quantity or its quality—Changes of quantity—Phenomena attending plethora and anemia.

IN those sciences which are called natural there is no primitive fact such as may be found in some others. Geometry is based upon the law of gravitation. In our study of the natural sciences, it is sufficient to analyse the facts, to classify, to bring them together, or separate them, as be necessary: for this purpose different methods have been employed. Some, supposing the existence of a primitive principle, endeavoured to arrive at it, and sought for it in the material, or the dynamic, state of life. In pathology, it has been sought for in the solids and fluids; at one time, inexcitability, named also excitability, or the vital forces, was considered as its seat. Others have attempted to study the laws of the vital forces, as they would those of gravitation;—the attempt has been fruitless, for we can find no primitive fact from which the particular ones can be deduced. In the actual state of science, we cannot trace any general fact which will give us a key to all the others, as gravitation gives us the solution of all the facts in geometry.

Many persons at the present day reject any researches on this subject, and merely study the facts themselves; such are the empirics or exclusives, who, seeing the errors of our predecessors, will not inquire into the causes of effects. All those who, at the present day, give themselves up to the study of these sciences, admit a succession of facts drawn from the different systems of fluidism, solidism, &c., and re-

cognise those which have stood the test of ages, while they reject those which are erroneous; and I am willing to admit, that all the doctrines that have swayed the minds of men do contain some one fact or other, although the conclusions drawn from them may have been false. This doctrine is at present much in vogue, and by it we explain one fact by solidism, another by fluidism, and another by vitality. At present every body is eclectic, while twenty years ago it required no small degree of courage to be eclectic, or fluidist, or to maintain that the alterations of the blood had any influence over diseases. I found that the theory of solidism could not explain a great number of facts, and I sought for their solution in the different theories of fluidism, &c., and thus I became eclectic, whilst almost all were still influenced by the doctrines which then prevailed.

We have to study the forces which have been created with matter, and the influence which these forces exercise over it. Are the forces which produce the phenomena in organized bodies identical with those which produce them in unorganized, or bodies inert? Although organized bodies possess functions peculiar to themselves, we are not to conclude from hence that they do not possess properties which belong also to matter in general. We have two orders of phenomena: one produced by laws which regulate matter in general, the other by laws which regulate organized matter. Excitability is a special fact, but phenomena purely chemical and physical also take place in our bodies, as many of them are explained by weight, porosity, &c. We therefore admit two kinds of forces or phenomena in the living body,—one which is peculiar to organized matter, the other which is common with the physical laws. Our predecessors had attempted all that has been discovered within our time, but they were exclusives—some being chemists, others physiologists, others mechanics, hydrodynamists, &c. What marks our era is not the number of discoveries, but that we take into consideration the facts which have been collected in past ages, without being exclusives, chemists, solidists, &c., and resuming the labours of our predecessors, we are enabled to improve upon their ideas by the greater lights furnished to us by the sciences of the day. Philosophical doubt is useful to science, but scepticism is fatal to it. Sceptics, although disbelieving the testimony of others, are very credulous as to what they themselves observe, for it is one of the principles of our mind to search for causes of effects produced, and when we meet with a fact to endeavour to trace it up to its origin. Before the clinics had

afforded the advantage of studying diseases from nature, the student was obliged to acquire his information from books, and thus was thrown into practice without having ever seen those affections which he was called upon to treat. But now that the hospitals have been thrown open, and that clinical instruction gives every facility for studying diseases from nature, the student too often thinks that he may dispense with reading; but let me tell you that there can be no good observation without reading, and the number of facts which any one person can observe can never be sufficient to make him acquainted with medicine. On this account, I strongly recommend you to read both the ancient and modern authors.

I shall treat this year in particular of the diseases produced by the alterations of the blood, and then of those of the nervous system.

The alterations of the blood played an important part in the old systems of pathology. The solids were represented by the containing parts, the fluids by the parts contained, and the movements by the vital forces; the ancient Greeks clung to these opinions, being exclusively and successively attached to the doctrines of fluidism, solidism, and of the vital forces. Galen proved that these different sects should be united into one, as laid down by Hippocrates. During the seventeenth and eighteenth centuries, the humoral doctrines prevailed, but at the beginning of the present they lost ground; their insufficiency being felt, people were obliged to have recourse to solidism, and among the latter is found Bichat, who, although a solidist, was not an exclusive. Pinel attributed every thing to the alterations of the solids: this doctrine prevailed until about ten years ago, when that of fluidism began to revive, and at that period the alterations of the blood, which to-day are duly recognised, were not admitted. Pinel rejected all the helps of chemistry, but this science, aided by the microscope, is now enlarging the field of our observations.

Every thing comes from the blood, and every thing is carried off by it, and as it is of great importance in physiology, so likewise its importance should be considered in pathology; but until this is confirmed by observation, we will not admit its influence into this science. Many theories have been advanced, but few facts have been established. It is very necessary that we should be well acquainted with the healthy state of the blood, before we can decide upon its alterations. We are still ignorant of the composition of the blood, for the theory which yesterday was looked upon as conclusive and convincing is to-day replaced by a new one. Those who

study the microscope see with different eyes; their researches on the blood, like those of the chemists, differing greatly from each other. Another plausible objection which has been raised, is, that the blood which we examine in the cups is no longer the same fluid which circulates in the living vessels: it is not necessary to resolve this problem, for all that is required is to find out if this blood is always the same, and if it is always identical, the alterations which it exhibits, represent those which existed in the living state. History is a prophet come back. Bordeu exclaimed against the chemists, who, by means of their science, explained the vital forces; the systems of chemistry of Kowalle and his contemporaries have been overthrown by that of Lavoisier, and, perhaps, it may come to pass, that the chemical theories which are received to-day will vanish in their turn; for can the chemist pronounce his science to be certain, when so many systems have been subverted? I can shew you many facts in pathology, first established by Hippocrates, and which to-day are received as such, proving that the science of medicine contains many positive facts.

The alterations of the blood are of two kinds—in its quantity and in its quality. This latter is the most complex, as it may be changed in its visible properties, in its density, colour, &c.; which changes may be ascertained without the aid of instruments, but by the aid of the microscope we discover others. Alterations in the chemical properties must also be studied; for although we must admit the insufficiency of chemistry at present, yet it furnishes a certain number of positive facts. The blood of an animal affected with anthrax (*charbon*), although, with all our means of examination, we can detect no alteration in its composition, injected into a healthy animal will cause its death.

Astruc divided the alterations of the blood into three classes.

In the first class he described the alterations in quantity, which may be increased or diminished. The second class, which he subdivided into three orders, comprised the alterations in its qualities.

1st Order.—Alterations in its physical properties, its consistency, thickening, coagulation, &c.

2d Order.—Alterations of the crassamentum and composition of the blood, by means of foreign particles, pus, miasmata, &c.; or alterations in the principles of the healthy blood, in its serum, fibrin, globules, &c.

3d Order.—Augmentation of its salts, &c.

In his third class he described those alterations resulting from a modification in

the motion of the blood, which was either thus affected in its entire mass, or merely in the movements of its globules. This latter question is now attempted to be decided by the microscope.

What forms the subject of our investigation to-day, had also been the study of the ancient teachers.

1. *Alteration of the Blood as to Quantity.*

Any increase or diminution in the quantity of the blood produces a change in its constitution: thus, if it be augmented, the blood becomes richer, and *vice versa*. We can only tell by analogy and reasoning whether the quantity is increased or diminished; and by observing the phenomena which occur when this change takes place, physiology teaches us that the blood vivifies, gives colour, &c., and when we see all its functions increased, the tissues being more coloured than usual, we admit, by reasoning, that the blood which produces these effects is increased.

This condition constitutes plethora, or general hyperemia. If the sanguineous temperament be exalted, a state of plethora is induced. Formerly, four kinds of plethora were admitted.

1. Plethora ad molem, with respect to the mass of the blood.

2. Ad spatium, related to the space, the vessels being retracted, the blood not being increased.

3. Ad vires, the forces of the circulatory system being irregular.

4. Ad volumen vel spuriū, related to the expansibility of the blood, occupying more or less space, depending upon nervous condition, &c.

Some cases occur in which the capillary vessels are more or less dilated, and in which the plethoric state is simulated, as in hysteria, and many other nervous diseases; and the same has been found even where the asthenic diathesis has existed; as also after great loss of blood, and in those cases where sanguineous congestions have been formed in different parts.

Is the density of the blood augmented in plethora? It is often very difficult to tell, by the appearance of the blood, whether it is changed in this character. In the plethoric state it presents a large clot, and its density and consistence are considerable; but this state of the blood may be found in a healthy person, and therefore these appearances do not furnish us with any pathognomonic signs. The blood drawn from plethoric persons, does not, in the great majority of cases, present a buffy coat, which is well formed, whitish, resisting, and of half a line in thickness; and if, after phlebotomy, the blood drawn does furnish a well-marked buffy coat,

it is probable that no plethora exists. Boerhaave thought that the blood of plethoric persons was thicker than that of healthy persons; but of this we have no sufficient proof.

Influences of Plethora on the Constitution.

1st. It may modify the symptoms of disease, and should also produce a modification in their treatment.

2d. It may produce several diseases.

3d. It may in itself constitute a disease.

1st Proposition. — Plethora was looked upon by the ancients as a state of inflammation, or of general reaction. One of the effects of plethora is to produce local hyperemia or sanguineous congestion; but these latter may increase and become developed with the asthenic state, and will only be removed by such means as will cure the latter—as quinine, &c.

Hæmorrhages are sometimes brought on by a plethoric state. The suppression of the catamenia, by producing plethora, may be the cause of hæmorrhages, although these latter are not always connected with such a condition; as, for instance, apoplexy of the brain, which is seldom dependent upon plethora. I think it is a mistaken notion which supposes plethora as predisposing to inflammation; for, out of thirty cases of pneumonia, two are not produced by, or owing to, a plethoric condition. If, out of ten persons exposed to cold, one escape an attack of pneumonia, that one will probably be of a plethoric temperament.

Certain diseases of the skin, such as boils, &c. seem to depend upon a plethoric state; and a cutaneous eruption sometimes appears in those in whom plethora has been induced by a suppression of the menses.

2d Proposition. — There are some morbid conditions in which the secretions are increased, which seem to depend upon hyperemia. Plethora, among other causes, produces an augmentation of the serum; giving rise to active dropsies, in which the vessels seem to be too full of blood, and which are relieved by blood letting; if in living animals we distend the circulatory organs with water, absorption becomes diminished, and the transudation from the vessels increased: some serous exhalations seem to depend upon the quantity of blood in the vessels being increased. Plethoric persons perspire freely and constantly through the skin, and if this perspiration be checked, the skin becomes the seat of a pruritus, and symptoms of fever may shew themselves, which will disappear when the perspiration is re-established: the urine of plethoric persons contains a quantity of uric acid, which forms a deposit of red particles, and their

blood being very rich, we might suppose that nutrition would be greatly increased, but we do not find this to be the case, although the heart is sometimes found hypertrophied. I do not believe, generally speaking, that plethora excludes the formation of tubercles and other morbid productions; but this rule is not without exceptions; if cancer becomes developed in a plethoric person, who is at the same time of a sanguineous temperament, it gradually destroys the state of plethora. Plethora also exercises certain influences over the nervous system in congestions of the brain and of the respiratory apparatus.

Third Proposition.—The plethoric state being exaggerated or increased to excess, may in itself constitute a disease in which all the functions become deranged, and a fever is produced. I am of opinion, that plethora increasing to a state of excess, may cause fever in the same way as it may produce derangement of a single function: the fever thus taking place in a plethoric person, always assumes the inflammatory form, and requires blood-letting. This fever may be symptomatic of a phlegmasia of the heart or the vessels of the circulatory system, or may depend upon the overexcitement of the organs by the blood, which is too rich, and may be designated hyperemic fever; it is short in its duration, and terminates favourably; the state of excitement being calmed by evacuations preceded by perspirations or by epistaxis, or hæmorrhage from the uterus or hæmorrhoidal veins, the blood by these means being diminished in its quantity or richness. Or it may terminate in another manner, the excitation being determined to a particular organ, which henceforth will constitute the predominant lesion: there are few phlegmasiæ which are not preceded by this inflammatory fever, succeeding or produced by an exaggerated plethora.

Causes of Plethora.—It may exist from birth, or become developed without any particular cause. There are some persons who make too much blood, others on the contrary make too little. We are ignorant of the natural causes of plethora: the different periods of life exercise a great influence over plethora: children are exempt from plethora, on account of the activity of their growth; a state of false plethora is common amongst them, on account of the delicateness of their skin, and this condition is styled lymphatisme. When the growth stops at the time of puberty, plethora frequently shews itself, constituting what is called accidental plethora, which may disappear in a short time. Old age seldom falls into a state of plethora: although from certain causes it may exist at this period of life, the plethoric state exists in a direct ratio with

the activity of the functions which produce the blood.

Influence of Digestion.—The more abundant is the formation of chyle, the more likely is plethora to be produced; and it is frequently met with associated with a great increased development of the respiratory apparatus. There are two varieties of old men—one who retain the appearance of youth, and whose lungs resemble those of younger men; and the other, who are decrepit, and whose lungs present enlarged cells, and in whom the organ of hematose is imperfect: persons of a nervous temperament generally have a quick pulse, and are not subject to plethora, and from this circumstance we may infer that the rapid circulation of the blood is not a cause of plethora. The palpitations of the heart, which are met with in plethoric persons, are the effect and not the cause of plethora: if the period at which menstruation begins passes over without the appearance of the discharge, plethora is frequently induced: during the whole period of menstruation it may be produced by any suppression of this secretion, and the cessation of the menses may dispose to it, and it may likewise occur during pregnancy. Plethora shows itself in some individuals at the time of spring; and the acute diseases which occur at this period of the year require to be actively combated by blood-letting.

Anemia.

Anemia is that state which is opposed to plethora, and in which the vessels contain a lesser quantity of blood, which is of a deteriorated or impoverished quality. Some persons bear the loss of a large quantity of blood without falling into this state, whilst in others this condition is produced by the loss of a small quantity. Those of a nervous temperament, and particularly women, do not bear the loss of much blood, and having this in our recollection, when treating their diseases we do not carry our bleedings to the same extent as we would in other cases: hospital patients support bleeding better than those in private practice.

Age considered with respect to bleeding.—We meet with some cases when we must bleed, without taking into consideration the age of the patient. The state of anemia is easily produced in children under the age of six years, by large bleedings. Robust old men will bear large bleedings, but those whose lungs are, as it were, atrophied, and in whom the process of sanguification is feebly carried on, are easily thrown into this state, and large bleedings in them may be attended with the most fatal results. In such cases, the bleeding, if employed to arrest the inflammation,

if pneumonia is the subject, will fail; the bronchial tubes become filled with mucus, and death takes place. This division of old men into these two classes will explain those different results which we find detailed by authors. The more rapid is the abstraction of blood, the more quickly is anemia produced.

In anemia the blood is altered in its physical properties, as well as in quantity. The proportions of water and serum are increased, and those of the fibrine and globules are lessened.

Causes of Anemia.—Some persons, without any cause to explain it, produce an impoverished blood, and present a condition of spontaneous anemia, characterized by paleness of the face, and all the symptoms of debility, without being affected with any organic disease, or having suffered the loss of blood. This state is more frequently met with in women than in men. Is there any difference between anemia and chlorosis? This latter affection is now considered as depending upon the uterus. A man who has lost much blood by hemorrhoids will present all the symptoms of chlorosis. The blood of a chlorotic patient presents the same alterations as that of an anemic person. Anemia produced by an hemorrhage is cured by the same remedies as chlorosis. I look upon chlorosis as a state of spontaneous anemia more frequent among women, and met with not only amongst adult unmarried women, but also amongst married ones, and girls of seven years of age. Anemia may be produced accidentally by hæmorrhoidal discharges, prolonged abstinence, diseases of the lungs, and great efforts and expenditure of nervous influence. About twenty years ago, an epidemic anemia broke out amongst those employed in a mine in the south of France, and all those who were attacked by it presented the symptoms of chlorosis; its causes could never be ascertained, and it is the only case on record of the kind. Anemia may be produced by an unwholesome atmosphere; but the affection thus brought on is of an imperfect form.

Symptoms.—Anemia exercises a great influence over the intelligence, sensation, and the movements of the muscular system.

Effects on the Intelligence.—Delirium sometimes follows large bleedings; the brain being imperfectly excited by an impoverished blood, produces disorders of the intelligence, and the delirium thus produced has been well described by Marshall Hall, who mentions thirty cases which were treated by brandy and beef-tea.

A comatose state, putting on the symptoms of inflammation of the brain, may be connected with a state of anemia;—

when persons are recovering from an illness which has brought them to the verge of the grave, and after great debility are beginning to retrieve their strength, their intelligence becomes disordered, and a real state of mania becomes developed. [A case was related of a woman recovering from peritonitis, who was affected with delirium during her convalescence, which was prolonged for six months, at the end of which time her forces having returned, her reason again became sound, her blood at this time being produced richer in quality.]

Effects of Anemia on Sensation.—In a number of cases the sensibility increases as the blood becomes impoverished: the skin becomes more irritable and sensible; sounds strike painfully on the ear, odours are disagreeable, and light hurts the eyes. These symptoms disappear when the state of anemia ceases. Total abstinence prolonged brings on anemia, with total loss of the sight, preceded by a state in which the sense of vision becomes exalted. This kind of amaurosis is followed by death, and dissection discovers no lesion of the brain, which is merely found paler than natural. [Case cited in which there was loss of sight produced by a fright, which caused a shock to the nervous system.] Vertigo, headache, singing in the ears, &c., are produced by anemia, and in some cases it is impossible to distinguish the symptoms of anemia of the brain from those depending upon hyperemia of that organ. [Case related of a man who had been repeatedly bled for symptoms which were referred to a cerebral congestion; in consequence of this treatment, he became very nervous, pale, and sunken; his sight became affected, his digestion deranged, and his functions disordered. By the gradual exhibition of tonics all these symptoms were in time removed.]

Contractility affected by Anemia.—Great weakness of the muscular system in chlorotic females is often the first symptom of anemia, and this debility seems to depend upon the blood containing less fibrine. We sometimes meet with cases of convulsions in which the muscular system is in a state of exaltation. Animals who die of hemorrhage die convulsed, and in children convulsions are produced by leeches or by chronic disease, and lying-in women are often thus affected after floodings. Young females, who are pale and chlorotic, are often affected with chorea. Subsultus tendinum is another example. These are all proofs that convulsions exist in connection with anemia, or an impoverished condition of the blood.

[Case of tetanus cited, which came on after an hemorrhage.]

ON THE
CAUSES, SYMPTOMS, AND TREAT-
MENT OF SUPPRESSION OF
URINE.

By JOHN CHARLES HALL, F.L.S.

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&c. &c. &c.

[For the London Medical Gazette.]

Aliter vitium vivitque tendo.

MASON GOOD, in his Practice of Medicine, designates this disease paruria inops. Dr. Elliotson, in his lectures (MEDICAL GAZETTE, vol. xii.), speaks of it under the title of ischuria; and Dr. Willis has well described it by the name of anuria, or anuria apyretica: in truth, so many are the titles given to it, so obscure are the symptoms marking its approach in the first instance—aye, even its existence, in the earlier stages—that we may not inaptly observe, with Virgil, that “the disease lives by being concealed.” The disease is not one of very frequent occurrence. Dr. Elliotson remarks, “he has only seen one case,” and that occurred after the patient had taken a quantity of corrosive sublimate by mistake: by proper treatment the man recovered, but, after some days, was attacked with anuria, attended by hemiplegia, and that drowsiness which is always a symptom after suppression of urine has continued for some time. From this we may infer—that is to say, from the apoplectic symptoms ushering in death—the urine is re-secreted into the ventricles of the brain; but in the case at present under consideration, nothing of this kind was discovered; “there was not only no urine in the head, but no excess of fluid either in or upon the brain;” a result for which the doctor was evidently unprepared.

Dr. Bright, in his valuable Researches into Diseases of the Urinary Organs, remarks, “that in cases of granular degeneration of the kidneys, total suppression of urine but seldom occurs.” There is, however, no doubt but that various states of the system, both in health and also in disease, have an effect upon the secretion of this fluid, which I regard as composed of certain elements, the longer continuance of which in the blood than natural is always attended by disease, and the total suppression of their

elimination, by death: the last stages of the patient's life being marked by symptoms which denote an affection of the brain. Respiratory and intestinal exhalations, as well as cutaneous transpiration, more or less influence the functions of the kidneys. Copious dejections from one or more of these surfaces diminish the quantity of urine, and the opposite states never fail to produce a contrary effect. In fever, in small-pox, after injuries and surgical operations, we have (more or less, as the case may be) a diminution of the secretion of urine. Again, after injuries of the spine in the region of the kidneys (or tubercular disease of the cord), we have frequently retention of urine, with considerable febrile excitement. But besides an inability of voiding the urine, Sir B. Brodie has frequently pointed out a marked diminution of the quantity secreted. In some cases the urine first secreted, although of an acid quality and free from mucus, has a very offensive odour; in other cases I have remarked its peculiar acid nature, its opaque appearance, and yellow amorphous sediment. I regard, however, the most common change to consist in the peculiar ammoniacal smell, and the deposit of a large quantity of adhesive mucus: the urine, when tested with reddened litmus or turmeric paper, is found to be very alkaline. After some time, phosphate of lime, secreted by the inner coat of the bladder, is blended with the mucus, which is tinged with blood. Such a state of things may be produced in three or four days after the accident, or they may not come on for a week: in one case, I remember, it was nine or ten days after the injury had been received, that they were apparent. I am not aware that one part of the spine, when injured, is more liable to produce them than another. In fatal cases they remain to the last; in others which recover, they perhaps go on for three or four weeks. There is another peculiarity, also, to which my attention was first directed by that justly celebrated surgeon (during the time I was his pupil, at St. George's Hospital) Sir B. Brodie, which consists in the variation which takes place in the state of the urine; to-day it may be alkaline, depositing adhesive matter; the next, we may find it clear and acid, and the day after alkaline again. Suppose, however, that the spine becomes injured, and that

very little disturbance at the time takes place—so little, in fact, that it may be overlooked; after some days, the patient is attacked with paraplegia, followed by gangrene of the nates and retention of urine; but perhaps after a week, or even a longer period, the quantity secreted is diminished, and at length ceases altogether, when fatal coma terminates the existence of the sufferer—terminates an existence deplorable in the extreme. The peculiar suppression of urine in cases of malignant cholera is well known to all who have attended cases of that singular and fatal disease. But independent of acute disease—independent of any derangement that is apparent in the structure of the kidneys—their secreting office is completely suspended. This morbid condition constitutes the disease which Dr. Willis has named anuria; said by him to terminate in coma in four or five days, and in death in a few days more. I am of opinion, however, that in complete suppression of urine, death takes place in a much shorter period; in some cases, in less than forty-eight hours. All cases end in coma; some with, others without, convulsions, but all have evident symptoms of apoplexy.

Notwithstanding this disease is said to be of “rare occurrence,” I am inclined to think that such is not the case; the symptoms are so masked that the patient may die without the true nature of the complaint being discovered; nor am I aware that, until late years, the profession have very particularly directed their attention to it. Suppression of urine may be divided into two stages:—1st, when the suppression is partial, and 2dly, when it is complete.

1st. Cases in which we have a Partial Suppression of Urine.

Such cases are far from unfrequent. A patient exposes himself to a cold atmosphere—remains loitering about in his garden, for example, on a cold November day. In the evening he complains of having taken cold, creeps to the fire, and has frequent rigors. He retires to bed; his skin is hot and dry; his urine scanty and high-coloured; his tongue, the next morning, is coated; perhaps the bowels are confined. This scanty secretion of urine not unfrequently continues for some days, although the patient feels better, having been relieved by copious evacuations from the bowels and continued perspiration. Dr. Parr

relates a case in his own practice in which no urine was secreted for six or seven weeks; and the case of a boy of seventeen is mentioned by Dr. Richardson who had never made water from his birth, nor had felt the least uneasiness on this account, being healthy, vigorous, and particularly active. Haller also has given us some account of a case (Bibl. Med. Pr. ii. p. 200,) that lasted for twenty-two weeks. He does not, however, give it upon his own authority; it was probably related to him by another, and, I think, is little to be depended upon: it is folly to suppose that the constituent principles of so important a secretion as the urine can long continue in the blood—can long float in the system, and load the blood, without the greatest danger. “The outlet,” (says Dr. Mason Good,) “at which these are separated and discharged is not always manifest, and hence they sometimes appear not to be separated at all.” If, however, a minute observer—a practical and accurate pathologist, makes the examination, the vicarious channel will always be detected.

The two great outlets which serve instead of the kidneys are the bowels and the skin. Dr. Parr informs us that, in the case just quoted, there was a profuse sweat; he does not, however, give any account of the state of the bowels. In Dr. Richardson's case, he admits that the young lad laboured under constant diarrhœa. Dr. Samuel Arnold, in the “New England Journal of Medicine and Surgery,” mentions the case of a young woman who had a retention of urine for two years, and through the integuments of whose lumbar region a fluid like urine escaped. On one occasion she was not relieved by the catheter for seventy-two hours, when a fluid, like urine, was discharged, first in drops, and then in a larger quantity from the right ear. This patient vomited a fluid like urine, and, on one occasion, a fluid oozed from the navel. The fluid was on all occasions found to contain urea. During a period of several years, whenever the discharge diminished, (that is, when the kidneys refused to secrete), the patient was attacked with delirium, and occasionally with violent spasms like those of opisthotonos. M. Andral infers that the blood “contains, in variable proportions, the elements of all the secretions; that, under ordinary circumstances, these elements are separated from the circulation only by those organs whose special

structure is adapted to bring about such separation ; but, under particular states, these elements may be separated from the circulation by other channels than those regularly intended for the purpose ; not, indeed, in the condition of perfect secretions, but in a more simple form, containing the elements of such secretions."

I shall not here proceed to speak of the treatment necessary in cases where we have only a partial suppression of urine, as that will be best considered when we examine—

2d. *The Symptoms and Treatment of complete Suppression of this Fluid.*

The great and urgent danger of this complaint was first made known by Sir H. Hallford, who has communicated some very valuable observations upon the subject.

CASE I. — "A corpulent and robust farmer, of about fifty-five years of age, was seized with a rigor which induced him to send for his apothecary. He had not made water it appeared for twenty-four hours ; but there was no pain, no sense of weight in the loins, no distension of the abdomen, and, therefore, no alarm was taken till the following morning, when it was thought proper to introduce the catheter, and none was found. I was then called, and another inquiry was made in the afternoon by one of the most experienced surgeons in London, whether the bladder contained any urine or not, when it appeared clearly that there was none. The patient sat up in bed and conversed as usual, complaining of nausea, but of nothing material in his own view ; and I remember his friends expressed their surprise that so much importance should be attached to so little apparent illness. The patient's pulse was, at times, slower than usual ; at others, the patient was heavy and oppressed. I ventured to say, that if we did not make the kidneys act, he would soon become comatose, and would probably die in the following night, this being the course of the malady in every other instance which I had seen. It happened so : he died in thirty hours after this, in a state of stupor."—(*Vide Med. Trans.* vol. vi.)

Since the above was written, I have read Dr. Baillie's valuable work, who appears to bear me out in the division here made between cases where the discharge is altogether wanting, and others in which it is evident that a small quantity is secreted ; for he observes, "here

there is a great difference in the hazard of a patient's situation, whether the kidneys separate a very little urine, or none at all : in the first case he gradually recovers ; in the second, very rarely."

The symptoms of a total suppression of urine are frequently very obscure. The disease often is far advanced before the surgeon is aware of it ; the patient often may be going about his work in the morning, and, in a short period afterwards, be dead. Mr. Campbell has recorded three very interesting cases in the *Lancet*. The first, of a stout man, somewhat above sixty. He found him feeding his cattle out of doors, thinking little was the matter. On introducing a catheter, no water was found in the bladder. On being more closely questioned, he complained of some pain about his back. The next day he died comatose.

From the fatal character of this disease, it is of great importance to detect its approach in the first instance. It may be inflammatory, and then we have symptoms of nephritis. But the case is seldom so clear as this. You find a man following his usual occupation : he sends for you to draw off his water ; and you discover none in the bladder on the introduction of the catheter. There is a dull uneasy sensation about the loins ; a feeling of oppression at the pit of the stomach ; a disinclination to move from place to place ; a loathing of food. These symptoms are followed by rigors, pain in the head, and drowsiness, ending in coma and death.

The effects, then, of a suppression of urine consist in a declining energy and a growing torpidity in every function, clearly showing that the brain is directly weakened and rendered incapable of supplying nervous energy. Again, says the writer before quoted, "it is not difficult to account for these effects, since they naturally follow from the blood being overcharged with that excess of azote which it is the office of the urine to carry off : the destructive power of this agent is known to every one, as is also its further power of increasing the "coagulability of the blood." M. C. Chossat has made some highly interesting experiments (to which I must refer the reader), to decide whether the blood of persons afflicted with anuria be loaded with azote ; but this is a question I cannot take upon myself to give an opinion upon ; we can regard nothing

concerning it as certain until proved by chemical experiment. Suppression of urine may of course be either functional or arise from some organic disease of the gland itself: the symptoms, however, do not vary in either case, and death takes place, according to my experience, in exactly the same manner. I remember attending a case of organic disease of the kidneys, with Messrs. Carriek and Pollock, of Kensington, in which for the last week no urine was secreted.

CASE II.—Mrs. D—, of Newland Street, Kensington, was attacked about six months ago with pain in the hip and loins; pulse quick; urine scanty and high coloured. Notwithstanding the treatment adopted she got gradually worse.

October 1st, 1837.—I again saw her: the urine was now fetid and of a dark colour, often containing long strings of blood: she complained of great pain in the loins, which would not allow her any rest night or day. These symptoms continued until the last five or six days of her existence: her headache then increased; the urine ceased to be secreted; none was passed, nor did the catheter detect any in the bladder; she now became comatose, and died on the 14th of October. Twelve hours after death, I assisted Mr. Pollock in making a post-mortem examination: we found both kidneys diseased, particularly the right, which was one fungoid mass.

My attention, however, has been more particularly directed to this complaint, by the following interesting case, in which there was for many hours a total suppression of urine, yet the man recovered, and is now enabled to attend to the duties of his station.

CASE III.—A short time ago, when in the country, I was called upon to attend Joseph Lambert, æt. 27. He is rather below the middle height, thick-set and stout; his neck is short, his complexion florid: he is under-game-keeper to Earl Spencer, and often exposed to cold and wet.

March 18th, 1840.—He called upon me this morning, and complains of pain at the pit of his stomach; his bowels are relaxed, which he supposes to arise from eating a quantity of new bread last night, and drinking for the last week past more ale than usual; tongue moist; pulse 72; urine high coloured (but does not make less than usual); no headache; has not been of late ex-

posed to cold or being wet; “would be quite well if it were not for the dull heavy pain in his stomach.”

R. Ol. Ricini, ʒi.; Tr. Opii, ℥xij. statim.

He came to me again in the evening, saying, “he was no better;” the bowels had only acted once slightly, since the oil was exhibited: does not think the pain and uneasiness quite so severe as in the morning.

R. Ext. Colocynthis, gr. viij.; Hydrarg. Chloridi, gr. ij. M. Ft. pil. ij., statim sumendæ.

10 o'clock, P.M.—Has sent to say that he is much better.

19th.—I called to see him this morning at nine o'clock, and found him walking about in great pain; his face much flushed; tongue coated; pulse 90, quick and full. He had felt better till this morning: about seven o'clock, feeling uneasy, he got up to make water, and could only void a few drops: has not passed any urine for the last eighteen or twenty hours: upon placing the hand above the pubes it was at once evident that the bladder was not distended: a teaspoonful of very acid urine (all he had passed) was shewn to me. The true nature of the formidable disease we had to contend against was now apparent, and the introduction of the catheter confirmed my worst fears; not one drop of water came away. Upon examining him more closely, he said the pain in the loins was at times very severe; this was succeeded by a dull heavy continued uneasy sensation not amounting to actual pain—to use his own words, “as though the small of his back was half broken;” the eye was dull and heavy, the pupils considerably dilated; he complained also of slight drowsiness and pain in the head: “would go and get some sleep, as he thought bed the best place for him.”

V.S. ad ʒxvj.

The blood drawn was dark, thick, and tar-like; since the bleeding, has had a motion, which is pale and watery, the secretion of bile being evidently diminished. He was ordered to drink freely of linseed tea, to put his feet into warm water, to have a warm bath as soon as possible, and not to think of leaving his bed; the feet being cold, mustard poultices were applied to them.

R. Hydrarg. Chloridi, gr. viij.; Ol. Tigilii, ℥iv.; Ext. Hyoseyami, gr. iv.

Misce et divide in pil. iv. Sumat 1, quaque tertia horâ.

R Sodæ Sesquicarbonatis, ʒi; Pulv. Potass. Nitratis, ʒij; Tr. Hyoseyami, ʒij.; Tr. Scillæ, ʒj.; Tr. Lyttæ, ʒj; Mist. Camphoræ, ʒvss. M. Capiat coch. larga duo quaque quarta horâ.

R Ol. Terebinthinæ, ʒss.; Spir. Camphoræ, ʒj.; Lint. Saponis, ʒss. M. Fiat embrocatio, lumbis applicenda.

This was rubbed upon the loins frequently during the afternoon.

3 o'clock, P.M.—The medicine has produced two watery evacuations; complains of much pain in the head, and a dull heavy pain in the loins; pupils slightly dilated.

6 P.M.—Pupils much dilated; complains of more pain in the head; answers questions in a sharp quick manner, and is evidently becoming delirious. Wonders why I come to see him so often.

12 o'clock.—No better; has had two more evacuations, but has not passed any water. I now left him for the night, with directions to be called if any change for the worse took place.

20th, 9 A.M.—Has passed a bad night. Face flushed; pupils still dilated; complains of great thirst; the skin is still hot and dry; pulse 80, slow and labouring. I introduced the catheter, and drew off about two ounces of water—all that had been voided for forty-two hours.

R Pulv. Jacobi, gr. iv.; Hydrarg. chloridi, gr. ij. M. Ft. pulv. statim sumendus.

R Spir. Junip. ʒij; Muc. Trag. eo. ʒiv; Tr. Hamuli, ʒij; Magn. Sulphatis, ʒi; Aquæ, ʒviiss. M. Capiat. coch. ij. ampla quâque 4ta horâ.

12 o'clock.—Repet. Pulv. Jacobi, gr. vi. To drink freely of warm linseed tea; to put the feet into warm water; to keep the head cool. The bowels have been very freely opened.

9 o'clock, P.M.—Decidedly better; skin moist; pulse 72. Had made about three ounces of water since morning.

R Pulv. Ant. Potass. Tart. gr. i.; Magn. Sulphatis, ʒij; Tr. Lyttæ, ʒss; Syr. Tolutani, ʒss; Aquæ. ʒvss. M. Sumat Coch. ij. ampla quâque secunda horâ.

21st.—The only food he has taken since I was called to attend him has been linseed tea. This morning he is much better; less pain in the head; no pain in the loins; skin moist; pulse 72. Bowels well opened during the night; the secretion of bile evidently increased. To continue the mixture containing the

antimony. He had passed since my last visit about ten ounces of water.

22nd.—Improving. Still complains of a dull heavy pain in the loins; urine scanty, and high coloured.

23rd.—Much better. No pain in the loins; the urine gradually increasing in quantity. Has taken to-day a small bit of toast, the first solid food since he became ill. The pain in the head has quite left him.

R Magn. Sulphatis, ʒi; Potass. Bi-tartratis, ʒss; Spir. Eth. Nit. ʒij; Infusi Sennæ, ʒvi. Capiat coch. ii. ampla nocte manequæ.

R Hydrarg. Bichloridi, gr. i; Ext. Cornii, gr. x; Camphoræ, gr. viij. M. Ft. pil. viij. Sumat ij. hora somni omni nocte.

25th.—Much better. To take one ounce of castor oil when the bowels become confined.

I know of no other symptoms that need be recorded. He got daily better; is now able, as before stated, to attend to his duties, and to support a wife and young family.

CASE IV.—Mr. W. H—, æt. 40, a farmer, of rather full habit and of large stature, but a very temperate man, called some time ago upon my friend Mr. R. Cook, surgeon, Gainshorough, having walked a distance of nearly five miles. He complains of being "generally unwell;" the bowels are confined; has not passed any urine yesterday, or during the night; the pulse is slow and full; the bowels are confined. On passing the catheter, the bladder was found to contain only about two tea-spoonsful of urine.

V. S. ʒxx.; calomel, and saline aperients; an embrocation to the loins.

May 5th.—Bowels freely opened; pulse the same as yesterday; has passed a small quantity of urine.

7th.—Better in every respect. He got gradually well, but never was able to void a natural quantity of urine until he remained some time at Buxton, making frequent use of warm baths. He never had any of the pain, or sense of weight, in the loins, that I have described; in truth, so little did his malady appear to affect him, that his friends generally laughed at the fears of his medical attendant. The case, however, I regard as one belonging to the first division of my subject.

Lastly, we have to examine—

The Treatment of Suppression of Urine.

In our treatment of disease, we ever learn a lesson from the efforts made by nature to repair the injuries that disease or accident has made. Here, too, we may take a valuable hint from her; for as the excretories of the skin and kidneys are continually assisting each other in almost every possible way, we must endeavour, first, to excite the former, by active diaphoretics, to take upon themselves (for a time at least) the office of the latter, and thus carry off the urine that should be discharged by the kidneys; secondly, we must endeavour to restore the kidneys to their usual natural action by diuretics and saline purgatives. The most useful I have already endeavoured to detail in the treatment of Lambert's case. Digitalis has been recommended, but I am inclined to think that it is of little use; and if at all so, only when combined with tincture of cantharides, or some other diuretic.

Kensington, April 9, 1840.

CASE OF TRANSPOSITION OF THE VISCERA,

*Accompanied by imperfect Development of the
Spleen and Uterus.*

BY JOHN THURNAM.

[For the London Medical Gazette]

Two cases of transposition of the viscera having recently been published by Mr. McWhinnie, in the MEDICAL GAZETTE, I have thought the following case might, at this time, be read with some interest; especially as it unites in itself the two rarer peculiarities which occurred in Mr. McWhinnie's and Mr. Curling's cases respectively. I allude to the uncommon course of the inferior cava, and to the antero-posterior transposition of the duodenum and arch of the colon. I may observe that the case is also peculiar from the stomach and spleen not participating in the lateral transposition.

Complete lateral transposition of the Vascular System—Partially lateral and partially antero-posterior transposition of the Organs of Digestion—Imperfect development of the Spleen and Uterus—Long-standing Asthma—Chronic Pneumonia, ending in general Dropsy and Death.

Ann Bunce, aged 37, of short stature, delicately made, and with a very weak voice, was admitted into the

Westminster Hospital, under the care of Dr. Burne, February 13th, 1838. She had been asthmatic for many years, and reported that all her sisters were asthmatic. During two years previously, her general health had been bad; and for six weeks she had been much worse, suffering from severe dyspnoea and other symptoms of diseased lungs. Her feet began to swell about the time of her admission. The face, and especially the lips, were of a deep violet hue, and bloated; the surface was cold; there was oedema of the ankles, gradually spreading to the legs, and in a slight degree to the hands. Pulse very frequent, small, and weak, but regular and equal. There were dulness on percussion, and absence of the respiratory murmur over the region of the thorax, especially on the left side. The murmur was louder than normal in the upper part of the chest, especially on the right side. There were no abnormal murmurs of the heart, the impulse and sounds of which were very feeble. Attention, however, was chiefly directed to the state of the lungs; so that the region of the heart was not so carefully examined as it should have been. Dr. Burne (who, however, did not, in consequence, suspect any transposition of the heart) subsequently informed me that his notes, as to the state of this organ, were in these words—"heart's action distinct, and diffused towards the right side." She gradually became worse, and died March the 8th.

Dissection, 42 hours after death.

1. *Pathological changes.*—The right pleura was nearly free from adhesions; the left was adherent nearly throughout, but most firmly so over the lower lobe of the lung, and between that and the diaphragm and pericardium. The right lung, superiorly and anteriorly, had its air-cells evidently dilated, and a portion of the lower lobe likewise presented a similar condition. Posteriorly, this lung had lost its normal elasticity, and was in a state of general congestion. The upper lobes of the left lung were still more congested, and the whole of the lower lobe was in a state of very decided hepatization; which here and there only appeared to be passing into diffused suppuration. The bronchial tubes were loaded with viscid grey mucus. The heart was of more than full size for so small a subject, and weighed 8½ ounces, avoirdupois. The

anterior (pulmonic) ventricle was hypertrophied and dilated: excepting some scutiform thickening of the aortic valves, and some yellow spots in the mitral valve, and likewise in the aorta, which could not materially have affected the function of the organ, the valvular apparatus of the heart was normal. The arterial duct was quite pervious, towards the aorta, and its pulmonic extremity had only been closed by the delicate lining membrane, which appeared to have been ruptured in the centre before death; perhaps in consequence of the hypertrophy of the right ventricle, and the obstruction to the circulation through the lungs. There was "hepatic-venous congestion" of the liver: the kidneys were small, granular, and of a greyish colour.

2. *Congenital malformations.*—There was an almost universal transposition of the viscera.

a. *The circulating system.*—Upon removing the sternum, the bag of the pericardium was seen on the right side; and the apex of the heart was under the right mamma. The pulmonic ventricle was almost completely anterior, though if any thing inclined to the left side: its auricle was situated more directly to the left side, and received the superior vena cava, at its left upper angle: the relative length of the venæ innominatæ were reversed. The systemic ventricle was, with its auricle, directly posterior. The appendage of the latter was altogether concealed by the pulmonary artery, which occupied the right upper corner of the pericardium, and appeared somewhat dilated and twisted. The ascending aorta, which was of small size, rose up between the vena cava and the pulmonary artery. The arrangements of the internal structures of the heart corresponded with the traversed position of the cavities. The opening, in the pulmonic auricle, of the vena cava hepatica, which took the place of that of the cava inferior, was guarded by a delicate Eustachian valve. In addition to the usual coronary vein, and its Thebesian valve, there was a small coronary vein, which entered the auricle separately, and was also protected by a lunated fold of endocardium, directly in front of the oval hole, the valve of which was completely closed. The ascending aorta gave off the coronary arteries as usual: the arch was directed from left to right, and ended in the descending aorta on the right of the dorsal spine: it gave off, first, the

brachio-cephalic, which divided into the left carotid and left subclavian arteries; secondly, the right carotid; and thirdly, the right subclavian arteries. The relations of the right and left recurrent nerves were, that of the former with the termination of the aortic arch, and that of the latter with the left subclavian artery. The calibre of the termination of the aortic arch was much narrower than that of any other portion; but, after receiving the arterial duct, the opening of which was the size of a large crow-quill, the top of the descending aorta, for a small extent, became dilated in a fusiform manner; so that its calibre became increased by about one half. The descending aorta having entered the abdomen through the right foramen of the diaphragm, continued its course on the right side of the lumbar spine, and, after giving off the usual branches, bifurcated into the common iliac arteries. The vena cava inferior lay on the left side of the vertebral column; the relations of the right and left renal veins with the aorta, of course being reversed. The inferior cava did not, as usual, pass through the notch in the liver, so as to receive the hepatic veins, but entered the thorax so as to take the position of the azygos vein on the left side of the spine. It finally opened into the superior vena cava about an inch and a half above its termination in the auricle, or at the point where that vessel usually receives the azygos vein. The vena cava hepatica entered the thorax through the central foramen of the diaphragm.

b. *The organs of digestion.*—The œsophagus entered the abdomen as usual. The stomach was placed nearly vertically in the left hypochondriac and umbilical regions, and was furnished with a very short epiploon, the laminae of which did not receive the transverse arch of the colon. The course of the duodenum was apparent, without any dissection, in consequence of a curious antero-posterior transposition of the large and small intestines. This intestine first descended nearly vertically for an inch and a half on the left of the spine, which it then crossed, and, after ascending for a like extent, it received the biliary duct, and then turned forward and became continuous, in the right hypochondriac region, with the jejunum. The pancreas was situated quite superficially between the duodenum and the stomach: it had a short

roundish form. The small intestine was but imperfectly developed, scarcely measuring more than twelve feet in length. The cæcum was very large and loose, had its usual appendage, and was situated in the left iliac region. After the colon had ascended in the left lumbar region, it was lost sight of, in consequence of its passing behind the duodenum and root of the mesentery, by which the transverse arch was bound down over the aorta and vena cava: finally, the descending colon and sigmoid flexure occupied the right lumbar and iliac regions. The large lobe of the liver, with the gall bladder and lobulus Spigelii, were in the left hypochondriac region; the small lobe in the left. Behind the stomach was a round spleen, the size of a small apple, and, accompanying it, were five supernumerary spleens, the size of walnuts and filberts, which grew, as it were, from the branches of the splenic artery something like a bunch of grapes. The stomach and the spleen were the only azygos organs which were not transposed.

c. Reproductive system.—The uterus, externally, was of its normal form; but, when cut into, it presented a distinct bilocular cavity.

Retreat, York, April 2d, 1840.

CASE OF GLANDERS.

To the Editor of the Medical Gazette.

SIR,

As the following case is of some interest, being connected with that of the man who lately died of glanders in this hospital, should you deem it of sufficient importance, I shall feel obliged by its insertion in your valuable journal.

I take this opportunity of mentioning, that the cases were under the care of Mr. Stanley, for whom I had the pleasure of dressing, and with whose kind permission I have sent them. It is unnecessary to enter minutely into detail, but the leading circumstances of the case are the following:—

Jane Love, æt. 42, on the third or fourth day after the death of the man John Smith, upon whom she had been attending, perceived a "hard lump" near the left axilla, which was painful, the pain extending down the inner side of the arm. She, however, took so little notice of this as not to mention the circumstance to any of us. On the Saturday evening (March 21st), being the

sixth day after the man's decease, the pain in the arm increased, and an inflammatory blush appeared on it; this, however, she considered to be nothing more than a slight attack of erysipelas, which continued, however, to extend, and on the Sunday morning presented the following appearance:—The anterior, posterior, and inner aspects of the arm, from the axilla down to the elbow, appeared to be the seat of an extensive phlegmonous inflammation, of a brick-red or dusky hue, and limited by a well-defined and elevated border. The swelling was indurated, very tender on pressure, and on its surface could be seen several small elevations, a livid patch about the size of a shilling in the neighbourhood of the axilla, and close to this a large irregularly-shaped vesicle, containing a yellow viscid substance at the bottom, and a clear limpid fluid floating above. The woman, who was of a plethoric habit of body, had an anxious countenance, rapid pulse, dry and furred tongue, which was red at the tip and edges, and accelerated breathing; complained of great thirst and a deep dull aching pain over the situation of the eye-brows. Stated that she had had several attacks of chills and heat alternating with each other, and had scarcely a wink of sleep the two preceding nights. Thirty leeches were applied to the arm, which gave almost immediate relief. The member was then enveloped in a linseed-meal poultice, and the usual antiphlogistic regimen enjoined.

On the next day expressed herself much better; the arm less painful; tongue moist and cleaner. Two incisions were made in the arm; the subjacent tissue was hard and brawny; no pus flowed from the wounds, merely blood mixed with a small quantity of serum. On the following day no discharge of pus from the wounds; the parts shewed no inclination to take on healthy action, but the inflammatory redness had crept down the elbow to the fore-arm. The tongue was dry, brown, and chapped; pulse rapid and deficient in power; countenance anxious. As it was now considered necessary to support the system, she was ordered strong beef-tea and sesquicarbonate of ammonia, in five-grain doses. This for a time had the desired effect, the patient expressing herself as better, the pulse becoming less rapid, with more power, and the tongue in a

better condition. This state, however, did not continue; no suppuration had yet taken place from the incisions; there was no tendency in the parts to take on healthy action; an erythematous blush appeared on the upper part of the chest and about the neck; several red and purple spots, about the size of a split pea, were seen on the left mamma, and between it and the shoulder; the patient complained of great thirst, and was constantly calling out for drink. The inflammatory process gradually extended down the forearm to the wrist and upwards, over the shoulder, involving the side of the neck and upper part of the back, and extending as far round as the shoulder of the opposite side. She gradually passed into a typhoid state, refused all nourishment except a little wine and water, grew weaker and weaker, difficulty of breathing came on, and she sank on the morning of the 30th instant.

The functions of the sensorium were affected early in the course of the disease, a low muttering delirium being present. There was also great dread, on the part of the woman, of having taken the affection from the man upon whom she had been attending.

Post-mortem Examination.—The affected arm was infiltrated with pus; purulent deposits were also seen between the muscles taking the course of the vessels, and extending up to the side of the neck and front of the chest; but the veins were free from deposits, and appeared healthy: numerous small collections of pus were seen in the texture of the muscles on the anterior part of the thorax; the integuments of the fore-arm were livid, and the subcutaneous and adipose tissues infiltrated with a sero-purulent fluid. The mucous membrane lining the larynx, trachea, and bronchi, was highly injected. No unnatural appearance was seen in the parotid or submaxillary glands. There were no adventitious deposits in any of the viscera; the spleen was of its natural size, but softened in texture. The shoulder-joint of the affected side presented no unnatural appearance when cut into.

That the foregoing was a case of absorption of poison into the system, may, I think, be fairly presumed from the following circumstances, namely:—the constant attendance upon the man who was labouring under a contagious disease, the nurse, at the time, having

several abrasions on the hand of the affected side, and the great liability of poisonous matter coming in contact with these abrasions during the performance of her necessary duties: the appearance of the symptoms just at this particular period, namely, within a few days of the man's decease, the aspect of the affected parts, and the history and progress of the case (which last I have not fully entered into, for fear of occupying too much space,) were something more, I think, than an ordinary attack of phlegmonous erysipelas; the great dread of the patient, that she had poisoned her arm, is also not to be lost sight of; the greater frequency of phlegmonous erysipelas occurring in consequence of local irritation, and the comparative rarity of the affection arising solely as a constitutional disease; and, lastly, the tendency of dissection or other poisoned wounds to produce this form of inflammation.

I think, therefore, there can be very little doubt as to the propagation of disease in this instance; at any rate, there can be no doubt as to the necessity of great caution on the part of nurses or others attending upon persons labouring under farcy or glanders. We have lately been informed that the propagation of this disease from one human subject to another has been ascertained in Paris by Breschet. That it is communicable by inoculation from the human subject to the horse and ass has long ago been established by Dr. Elliotson and other pathologists.—I am, sir,

Your obedient servant,

J. R. BRUSH,

Dresser, St. Bartholomew's Hospital.

March 31st, 1840.

P.S.—It may be worth while to mention that I inoculated three kittens with the matter taken from this woman's arm; two whilst she was living, and one after her death; that the kittens appeared to have nothing the matter with them till the punctures were nearly healed, when they were affected in an extraordinary manner, losing the use of their limbs, and appearing to labour under the influence of some poison absorbed into the system; one of the kittens had also a discharge of a thick yellow matter from the eyes; the mother also appeared to be affected, and lay snuffling and sneezing, and refused all nourishment for three days. The animals now being considered unsafe, they were destroyed.

REAGENTS FOR THE ALKALOIDS.

To the Editor of the Medical Gazette.

SIR,

I BEG to inclose you the copy of a paper which, at the request of Professor Buchner, I have just forwarded for publication in his monthly journal. As our present knowledge of re-agents for the alkaloids is limited, I trust that the following remarks may be interesting and useful.—I am, sir,

Your obedient servant,

GEO. KEMP.

15, Kaufinger Strasse, Munich,
April 1st, 1840.

To Professor Buchner.

SIR,—In the course of some recent experiments on organic bodies, I found

that carbazotic acid produced a copious precipitate when added to a solution of the sulphate of quinine: as the circumstance was new to me, I was induced to institute a series of experiments for the purpose of ascertaining the action of this acid on the principal vegetable bases.

The substances which I have submitted to experiment are—quinine, cinchonina, brucina, strychnina, morphina, narcotina, codeina, veratrina, solanina, conicina, emetina, and oxyacanthina.

The carbazotic acid and alkaloids were dissolved in alcohol (800), with the exception of narcotina, which was dissolved in æther.

The following table will show the action of the acid on the solutions of the above bases:—

Vegetable base.	Precipitate.	Soluble in	Insoluble in	Remarks.
Quinina.	Copious yellow.	Muriatic acid 1:130.	Sulphuric acid (1:5). Nitric acid 1:300. Acetic acid 1:050.	Crystallized with great difficulty. Colour unaltered by the action of nitric acid, but changed to yellowish brown by caustic ammonia and liquor potassæ.
Cinchonina	Ditto.		Sulphuric A. Nitric A. Muriatic A. Acetic A.	The precipitate is crystalline. Colour unaltered by ammonia and potash. When treated with sulph. and muriatic A. the colour is nearly removed.
Brucina.	Some shades darker.	Muriatic A. Nitric A. and moderately in Acetic A.	Sulphuric A.	When the precipitate is treated with hot alcohol, it assumes a dark orange colour, and is instantly converted into blood-red by the addition of a drop of nitric acid.
Strychnina	Colour intermediate between the preceding.	Muriatic A. Nitric A.	Sulphuric A. Acetic A.	The precipitate is exceedingly insoluble in acetic acid. When strychnine is dissolved in hot alcohol, the precipitate is not immediately seen, but appears in beautiful crystals as it cools. Colour unaltered by hot alcohol or nitric acid.
Codeina.	Yellow, but not copious.	Water.		
Morphina Narcotina Veratrina Solanina Conicina Emetina	None.			
Oxyacanthina.	Yellow and very copious.	Nitric acid.	Sulphuric A. Muriatic A. Acetic A.	The yellow colour is converted into brown by means of nitric acid.

From the above table we see that quina may be distinguished from brucina and strychnina by the insolubility of its precipitate in nitric acid; from cincho-

nina, by the alteration of colour on the addition of ammonia; and from *oxyacanthina*, by its precipitate undergoing no change of colour on the addition of nitric acid.

Strychnina and *brucina* may be easily distinguished by the greater solubility of the precipitate from the former in alcohol, and the facility with which it crystallizes. The most important circumstance, however, is, that when heated with alcohol, the precipitate of the latter becomes deep-orange coloured, and this, on the addition of a drop of nitric acid, is changed to a bright blood-red colour.

Both *brucina* and *strychnina* may be distinguished from *oxyacanthina*, the colour of the last being rendered brown by nitric acid.

With reference to the delicacy of this re-agent:—

One grain of the sulphate of quina was dissolved in 12,800 grains of water. A few drops of the aqueous solution of the acid produced a very perceptible precipitate.

One grain of *brucina* was dissolved in 3,000 grains of water: the aqueous solution of the re-agent indicated the presence of the base.

One grain of the sulphate of *strychnina* was dissolved in 6,000 grains of water, and, in this state of dilution, the effect of the re-agent was perfectly visible.

My attention is, at present, directed to the further investigation of the properties of carbazotic acid, and, if any practically useful results should ensue, I shall feel great pleasure in submitting them to your consideration.

I beg leave to subscribe myself, sir,

Yours very respectfully,

GEO. KEMP, M.B., Cantab.

Fellow of the Cambridge Philosophical Society.
Munich, March 25th, 1840.

ON THE
EFFECTS OF PARTURITION ON
THE NERVOUS SYSTEM OF
THE MOTHER.

By DR. CHURCHILL, Dublin.*

MR. PRESIDENT AND GENTLEMEN,—
Having been asked by your secretary, Dr. Brady, to fulfil a promise I made,

* Read before the Association of Physicians, April 6.

of introducing some cases for discussion, I offer you the following, which though not illustrative of any original observation, may, nevertheless, possess some interest.

And first, I would beg to call your attention to the effect of the process of parturition upon the nervous system. If, for example, you carefully examine a healthy woman previous to labour, and after delivery, it is impossible to overlook the great change which has taken place in her condition; even though her labour have been perfectly normal, of moderate duration, and with no accident subsequently.

The condition in which the woman is placed, cannot be considered as the consequence of the muscular exertion during labour, because it bears no proportion to it in amount and duration; and because the functions of other organs are more extensively deranged than we find them in cases of excessive exertion.

What then is this state? to what is it owing? in what does it consist?

It appears to me, to consist in a sudden and more or less severe *shock* to the nervous system, in consequence of the extraordinary disturbance to which parturition gives rise.

I have called it a *nervous shock*, because the phrase is already in use amongst surgeons, to describe a similar state occurring after an accident or operation. For instance, a workman in a factory has a limb torn off by the machinery, and he dies in two or three hours; but neither from hæmorrhage nor inflammation, for the former was prevented by the torsion performed upon the arteries, and there had not time enough elapsed for the latter. A post-mortem examination reveals no cause of death. Of what then did he die? Of the nervous shock.

The same explanation is given of the death which follows scalding or burning, provided it occur within a few hours.

Now this *nervous shock* is precisely what may be observed in certain cases of labour; especially after operations, and it may produce equally fatal results. It is not, however, confined to these cases, but exists more or less in all, and it requires but a little care to recognise it.

After ordinary labours, we find the sensibility of the brain generally diminished, though the organs of sense may be more sensitive than usual. The eye

has lost its brightness, and expresses only languor and exhaustion: it is, however, more intolerant of light as the ear is of sound, and if careful attention be not paid to these two points, cerebral excitement may result.

Again, the pulse indicates a degree of collapse, from the increased frequency to which it had attained during the second stage; it shortly falls as much or nearly so below the usual standard: at which point it remains until the patient recovers from the nervous shock.

The respiration generally preserves its relations with the frequency of the pulse, and may in accordance with it be rapid or slow and laboured. Various secretions dependent on nervous influence are changed in quantity and quality in consequence of the impression on the nervous system.

The patient recovers from the shock, under ordinary circumstances, after a few hours' repose and quiet, though the indirect effects are rather more permanent: and the progress of the convalescence is generally in proportion to the rapidity and completeness of this restoration.

So much for the nervous shock in its mildest form and under favourable circumstances. Now let us examine the condition of the patient, after a prolonged second stage, or after an operation; say that of version, in which the nervous shock is of an aggravated character.

The functions of the brain are much below par—the patient is depressed, though not anxious, with a degree of exhaustion as though she had been stunned. She lies on the bed without altering her position, with her eyes closed, or at least without observation; betrays no interest about her child, perhaps none about herself. The muscles are flaccid, and she can scarcely make an effort to move her limbs: her pulse is low and laboured, or quick and fluttering, and much weaker than usual: the respiration is either slow and oppressed, or hurried and panting; and the relation between the circulation and respiration is frequently broken.

In this state she may remain a considerable time, and then only by very slow degrees rally; or if the amount of shock be too great for the system, she will gradually sink, the collapse will deepen, and she will die. If a post-mortem examination be made, nothing is discerned to account for her death.

As far as we can judge, she dies of the shock or impression made upon the nervous system primarily, and, through that, upon the whole organism.

I shall now very shortly detail some cases which I have noted, illustrative of these remarks.

A few weeks ago, I was called upon to attend Mrs. K——, in her first confinement. She was one of twins, and was of a delicate constitution and highly nervous temperament. She was taken with labour-pains about 9 A.M., which recurred slowly until 12, when I visited her. I found the os uteri undilated, though not rigid, and the bag of the waters beginning to form. As the pains were rather feeble and distant, I left her for a short time, with directions to be sent for as soon as the progress of the labour quickened. In half an hour I was summoned in great haste, and on my arrival I found the child was born. The pains had suddenly increased in strength soon after I left, and three pains sufficed to expel the uterine contents.

There was but the usual amount of discharge, and subsequently some clots were expelled. She suffered a good deal from after-pains: but her condition for some time after the labour occasioned me much uneasiness. She seemed to be in a state of complete collapse; she scarcely spoke, and then only in a whisper, but lay in a state of utter exhaustion. Her senses were morbidly sensitive; the pulse was 140, small, and weak; the respiration was feebly and languidly performed; and it seemed doubtful for some hours whether she would not sink.

I requested a consultation, and my friend, Dr. Darley, was called in: he agreed with me that the case resembled exactly those where a severe nervous shock had been received; for excepting the after-pains, she had no local symptoms whatever.

We ordered opiates (which, however, she could not bear), cordials, and gentle stimulants, &c. By degrees the system rallied, but it was long before she recovered. Her pulse remained about 115, but I found that her twin sister's pulse (in health and in a state of quiet) was 120; which, of course, relieved my anxiety on this score.

The most remarkable circumstance connected with this case, is, that so severe a shock was produced by so short

a labour; the time which elapsed from my ascertaining that dilatation of the os uteri had scarcely commenced, until the birth of the child, not exceeding half an hour.

Similar depression is often seen after operations, and must be familiar to every accoucheur; from which some patients recover, and others die.

But the patient may die from this cause, even though the labour be terminated by the natural efforts; as the following case will prove:—

A patient in labour was admitted into the Western Lying-in Hospital, the year before last. The pains were tolerably strong, but the passages offered a good deal of resistance. Her condition continued favourable for about thirty hours, but then the pulse became more frequent, her skin hot, with a degree of restlessness; and a consultation was held. As a certain, though slow, progress was made, and as the suffering was not great, and, above all, as the patient expressed the utmost horror of instruments, it was determined to wait for two or three hours; and when I mention that it was by the advice of Dr. Darley that the delay was adopted, I offer the best defence of the line of practice pursued.

In two hours the head was pressing through the vaginal orifice; in three, the child was born alive.

During the last hour or two, however, the patient had suffered severely, and the expulsion of the child left her in a state of utter prostration. The nervous system seemed stunned; her countenance was expressive of complete exhaustion; the eyes were dull and heavy; the sensibility of both ears and eyes was diminished; the pulse was quick, weak, and fluttering; respiration rapid and panting, with deep sighing; the muscles were flaccid, and it required a great effort to move her limbs. Appropriate remedies were applied, but from this collapsed state she never rallied. There were no convulsive movements, and her intellect was clear until she died, which was in eight or ten hours.

We examined the abdominal and pelvic viscera, but they were perfectly healthy, and not a trace of any injury could be discovered. As far as I am capable of deciding, I should say that this patient died of the *nervous shock*. No one could doubt that she had suffered from this cause; and, from the condition

into which she was thrown, she never rallied.

About four years ago, I was called (as physician to the Wellesley Dispensary) to see a poor woman, in Hollis' Court, who had been some time in labour, but who had not sent for assistance until an hour or two before I saw her. I found her suffering from a quick pulse, and some degree of fever. The head of the fœtus was in the pelvis, and there was plenty of space, but the pains made scarcely any impression upon the child. Upon consultation with Dr. Darley, it was deemed advisable to use the forceps. They were easily applied, and the patient was delivered of a still-born child without much difficulty. After the expulsion of the placenta, she appeared very much exhausted, and very weak; without headache, and possessing her reason: the pulse was very slow and weak, and the respiration hurried and panting. The usual restoratives were ordered, and she seemed rather better. On paying a second visit in the evening, I learned that she had remained in the state I left her until six p.m., (the operation was performed at mid-day,) when she got weaker, and died rather suddenly. We obtained permission to examine the body, but discovered nothing to account for death; the abdominal and pelvic organs were perfectly healthy, and had suffered no injury.

Recollecting the depressed state in which we had left her, and carefully investigating her subsequent symptoms, we came to the conclusion that her death was owing to the *nervous shock*.

During the time that I was attached to the Wellesley Dispensary, we were summoned to a case at Ball's Bridge, which had been under the care of a midwife, and had been mismanaged. We found her with a quick pulse, hot skin, dry furred tongue, &c.; in short, with the usual symptoms which occur in a very prolonged second stage, with retention of urine in addition. From the latter she was immediately relieved; and no doubt could be entertained of the propriety of immediate delivery by the quickest means. I perforated the head of the child, but, from its putrid condition, found it difficult to extract it; I, therefore, introduced my hand for the purpose of turning, and brought down a foot; but, to our surprise, it was the foot of another child. I extracted it with tolerable ease; but it took a considerable

time to bring away the putrid one. The placenta was extracted.

During the first part of the operation the patient was delirious, but became quieter before it was finished. Afterwards she was exhausted and stunned; her breath laboured, sighing frequent, pulse rapid, small, and feeble, &c., &c.

I saw her in two or three hours after the operation; she had not rallied, though she appeared somewhat relieved. Her intellect was entire; no convulsions had occurred, the pulse continued frequent and weak, and the respiration was sometimes hurried; at other times slow. There was no pain on pressing the abdomen, and no complaint of more soreness of the outlet than usual. I called the next morning, but found that she had died during the night, without any new symptom; she gradually sank, and, at last, ceased to breathe.

We could not obtain permission to open the body, and, therefore, this evidence is wanting: but, from the symptoms, I do not myself doubt that the cause of death was the great shock necessarily arising from so tedious an operation under unfavourable circumstances.

I could easily accumulate cases; but I think these will suffice, and I shall, therefore, conclude by drawing your attention to one or two circumstances noted in some of these cases, and to the treatment which I have found most successful.

The patients most obnoxious to this effect of labour are delicate nervous women; those who have been allowed to continue too long in labour, or those with whom an operation is necessary; and the more severe the operation the more marked the symptoms, although I have seen them very striking after the mere extraction of the placenta.

It will have been remarked that in all the fatal cases the patient made no effort to rally from the state of collapse; and this I have invariably observed in such cases. When a rally is made, all danger from the nervous shock is over.

Another circumstance distinguishing all these cases is the total absence of any approach to convulsions, and the continued possession of the intellectual faculties until death: this is a very valuable guide in our diagnosis.

In the treatment of these cases, the first object is, of course, to recover the patient from the collapse; but the most

direct means are not the best. Vinous or spirituous stimulants are useful, but not the most useful remedies. I have always found opium the best means I could use; and I generally give it in the form of tincture, and in combination with ammonia. Ten drops of laudanum may be given every half hour, at first; then every hour, and, subsequently, less frequently. It appears to quiet the general disturbance, to diminish the shock to the brain, and to give the system time and opportunity to rally. At the same time a moderate portion of wine or spirits and water should be given at intervals sufficient to assist the effort to rally, but not so much as to cause violent reaction, and the patient be kept in perfect quiet, so as to encourage sleep. If this should take place, she will probably awake much refreshed, with a quieter pulse and equable respiration. If, on the contrary, the collapse should continue, our endeavours must be increased as the danger is more threatening.

When the imminent danger is past, great care will be still requisite, and all mental and sensorial stimuli must be carefully regulated rather according to the part, than the then present state of the brain.

The remainder of the cases I have selected I shall, with your permission, postpone to another opportunity.

Dublin, 136, Stephen's Green West.

FURTHER REMARKS
ON THE
RENEWAL OF THE VACCINE
VIRUS.

To the Editor of the Medical Gazette.

SIR,

As my friend Mr. Estlin pays me the compliment of saying that he always peruses my papers on vaccination with much interest, and as I can most sincerely assert the same of his, as coming from one whose exertions have been highly important to the cause we have both at heart, I wish to make some observations on the subject of his last letter, inserted in your journal for March 13th last.

Mr. E. endeavours to prove that the Vaccine Board, in their last report, are not justified in the assertion that the virus which they are now using is "the

produce of the original virus furnished by Dr. Jenner, which has now happily passed through successive generations of subjects in the course of forty-three years, and which forms the principal part of our supply."

As I doubt not that they can make their case good, I shall forbear any observations on this point, as not coming within my department; but it is especially the following passage of Mr. E.'s letter that I wish to notice. He says, "if he," (Mr. Aikin,) "or any of his colleagues, could verify, as the result of their own examination, that a stock of cow-pox matter is now in use, the original of which can be traced back for forty-three years, I am sure the profession will feel under much obligation for the establishment of a fact so valuable to medical science."

I know not what degree of presumptive evidence will satisfy Mr. E. in this particular; certainly it is not necessary to trace the genealogy of each transmission with the same accuracy that would be demanded of a claimant to a dormant peerage. Even were no register kept of the source of each inoculation, the very fact that there has existed for a long series of years a well-frequented vaccine station, in the same local situation, carefully attended to by the same individuals who had never been known to require any but their own supply for themselves and others, would of itself form a presumptive evidence of unbroken transmission in the same channel, sufficient for all purposes of fair physiological inference.

But as Mr. E. not unreasonably appeals to specified facts, and as I *am* in the habit of noting down the source of my own inoculations to be confined to my own stock, this will, I trust, be my excuse for stating my personal experience.

On turning back my register books year after year, I find an uniform succession of inoculation from my own patients without any foreign supply, up to January, 1821, being a period of full nineteen years from the present time. This being mid-winter, when, at all times, the applicants are very few, and of those few not many will bring their children out a second time, I find I was obliged to apply to my friend and former colleague the late Mr. Addington, whose station being at a Sunday-school room in the middle of Spitalfields, had always a much fuller attendance than

my own, and whose extreme, I may say punctilious, accuracy in registration of every thing connected with the subject, was well known to all his friends. I will now begin at the other and earliest end of my series. The Jennerian Society was established in 1803, and the stations in different parts of London were fixed, and the attending surgeons (gratuitously) were appointed in the course of the year. I do not know what is become of the registers of the Society; but, being a member of the first medical committee, I have a strong impression, almost amounting to certainty, that application was made to Dr. Jenner to furnish the first supply of virus, which was the more insisted on, as some early experiments on vaccination, made by Dr. Woodville, rather unfortunately, within the Small-pox Hospital, had produced a disease, often accompanied with pustules, which had for a time obscured the subject. Mr. Addington and myself took charge of a station in Bishopsgate-street; and, I presume, we derived our first supply of virus from the same (that is, Dr. Jenner's) stock. We continued together, in most amicable fellowship, till the institution of the National Vaccine Establishment, in March, 1805, when, being myself appointed one of the surgeons, I removed my station to another part of the same city ward to a room which I have occupied ever since. I know that it was a particular point with Mr. Addington to watch the comparative effects of vaccination year after year; and chiefly on this account he was at the pains, for a long time, to apply Bryce's test to nearly all his patients. In applying, therefore, in 1821, to this source to renew my broken chain of transmission, I was, in fact, only returning to my own source in early times, which I knew I could depend upon. Though it would be absurd in me to assert that it had never been changed or renewed from the cow, I can only say that I have never heard of any such change, nor ever myself had an opportunity of using virus taken directly from the animal, which, I think, I should have done had it been within my reach. I must beg to observe that I have never claimed an uniform transmission of my own stock of virus for so long a period as forty-three years; but I do claim the term of nineteen years from personal observation; and I think I have given strong presumptive evi-

dence that the chain was unbroken for about eighteen years more up to the first link which was furnished by Dr. Jenner himself. I must also add that I am only one out of several who have been running the same course, and whose experience might, perhaps, include a longer unbroken period.

Being one of the surgeons who returned to the establishment an opinion of the hitherto unaltered appearance of the effect following ordinary vaccine inoculation, I thought it right to state my reasons for this opinion, which I have done fully in a paper which you were so kind as to insert in your journal, May 18th, 1839. I will not intrude upon your pages by repeating them. They have elicited no further remarks from Mr. Estlin, so that I am unable to say whether they meet with his concurrence.

In the same paper I also made some remarks in defence of the Vaccine Board (quite as a volunteer I assure him), in their declining to adopt his renovated virus, and circulating it simultaneously with their own; and I also could not help expressing my opinion that it was quite unworthy of Mr. E. to extract an accusation of general want of trustworthiness in the Board, or, still worse, of deliberate intention to mislead, from a mere verbal over-sight in one of their reports, by which the word *million* is substituted for *thousand*, whereby an antiquity is given to their vaccination of *twenty thousand years*, a period when doubtless there were no cows to graze—no milkers to become diseased, and when the Berkeley Hundred of Gloucester was, perhaps, only tenanted by flying dragons and amphibious saurians. As Mr. E. has not scrupled to repeat this absurd accusation, I cannot do better than refer him to his own words in his very next sentence: “I do not make these remarks from any captious disposition to detect trifling inaccuracies in the National Vaccine Establishment.”

But to proceed to more agreeable matter. Wishing to make trial of Mr. E.'s renovated virus, I applied to him for some last June. In his letter accompanying the charged points which he sent me, he says, “Five months ago I should have cautioned you against making more than one incision in each arm; now the virus is so much less active that such advice seems unnecessary. The matter I now send is the

39th remove from the cow.” It appears, then, that it took some time, and several transmissions, before the virus was softened down, if we may so speak, to that mild and safe condition in which we uniformly find that which we have been so long using; and this gives countenance to the reports which we heard of the occasional production of severe and even alarming erysipelatous inflammation following some of the earliest trials of the renovated virus.

With the matter procured from Mr. E., I vaccinated four patients, and from these sixteen more—twenty in all; but of these only thirteen attended again. The results were as follows:—

The first failed entirely. On repeating the inoculation some weeks after, with other matter, vesicles were produced, but imperfect, dying away too soon, and the case was registered as unsatisfactory.

The second, a fine clear-skinned child, was seen again on the eighth day, when there were seven vesicles of as perfect and genuine cow-pox as I have ever seen, being of a pearly clearness, full of limpid fluid, and just hardened and reddened at the base by the incipient areola. Two days afterwards the areola was complete, regular in form, and not excessive, and the vesicles beginning to dry. In short, if I had wished to have the disease represented by an artist, I could not have selected a better subject.

I need not enumerate the other cases particularly. In all, the vaccination was quite correct, with some variation in the progress of the areola. In one, the vesicles were pale, hard, and flat, on the eighth day, but crept on successfully to full maturation. The last patient was not brought again till the seventeenth day, having gone through measles in the interval. There were four regular crusts in each arm, quite dried up, and contiguous to one was a pretty large ulcer, but shallow, and looking clean and healthy.

I then put an end to the experiments, and suffered this source of virus to die out. If Mr. E. asks why I did so, instead of adopting it in preference to my own, my answer is, that, whilst carrying on these trials, I took care to have other patients from my own stock running exactly the same course at the same time. I can truly say that, having the child with one vaccine source on my

right hand, and that with the other source on my left, I was utterly unable to detect any other difference in the appearance of each than what might arise from a little advance or delay of the areola. One sort might be called quite correct, and the other perfectly unexceptionable.

I consider, therefore, that we may now apply to Mr. E.'s renovated virus the same observations which Dr. Jenner makes concerning his own, in 1800. His words are these: "Whether the nature of the virus will undergo any change from being further removed from its original source in passing successively from one person to another, time alone can determine. That which I am now employing has been in use nearly eight months, and not the least change is perceptible in its mode of action either locally or constitutionally. There is, therefore, every reason to expect that its effect will remain unaltered, and that we shall not be under the necessity of seeking fresh supplies from the cow."—*Continuation of Facts, &c. 1800.*

In my opinion, the experience of many years only confirms this conjecture of the illustrious discoverer of vaccination. Though we have been obliged to abate part of our confidence entertained in the early days of this practice—of the absolute permanency of the security which it professed to offer, we have not yet obtained a shadow of proof, or even of presumption, that the renovated virus, however correct, promises more security to the coming generation than the original one, when selected with due care, has afforded to the now adult subjects of the earlier vaccination.

In fact, how can we reason on the subject of protection but from mere experience; when the acutest physiologist has never, that I am aware of, been able to throw the smallest light on that mysterious change wrought in the constitution by which a single attack of small-pox, in the mildest form in childhood, protects by far the greater number of persons from its most virulent contagion during a long life. View the bystanders round the bed of one whose features, swollen out of human shape, closed eyes, face covered with a black fetid mark, and throat choked with foul sordes, mask the extremity of this dreadful disease. One shall be a female, whose aged countenance still

bears the smoothness of youth. Ask her how she moves unharmed in this atmosphere of dense contagion; she will strip her sleeve, and, after some search, you will find a shallow irregular scar, the only remains of inoculation in early childhood, which, as she has been told by her mother, after two or three days of slight illness, was followed by the coming out of some ten to twenty pustules, after which all sickness disappeared, and they dried away in a week's time. Another by-stander shall be one whose manly features, mottled and smeared with deep scars and pitings, show how hardly, and with what a severe struggle for life, he has earned his protection. And yet, inferring from the rare but undoubted cases, where all protection has failed, we know that the second attack of small-pox will as readily visit the subject of the severe as of the mild disease.

Analogy, therefore, as far as it can be depended on, seems to show that there is a certain point at which the vaccine disorder gives its average security, and that every degree of local effect beyond this, whether shewn by wide-spreading erysipelatous inflammation, enlarged glands, and general irritative fever, is, at best, superfluous, and ought to be avoided if possible. This security-point, I have no doubt, is the conversion of the local into the constitutional disorder by, and during, the formation of the areola, which begins by hardness and tightness at the base of the vesicle, and is followed by its extension to the well-known ring of inflammation completed at a period varying from the eighth to the tenth day, or, sometimes, from interfering causes, protracted much later. In a paper of mine, on the interference of small-pox and other disorders with the progress of vaccination (*MED. GAZETTE*, Feb. 15th, 1834.) I gave several instances in which the vesicles proceeded to enlarge and fill regularly for several days, but remained quite pale, and felt loose and flabby under the skin, marking the interference of small-pox, of which the patient sickened directly after. Impending measles will produce the same effect. The vesicle will remain pale at the base, and quite loose in the skin; that is to say, will continue to be a merely local affection, whilst the measles proceeds through its regular course;

after which the vaccine areola will make its retarded, but accustomed, appearance, and the whole will terminate regularly.

I shall conclude by taking the liberty of recommending to vaccinators to have recourse, from time to time, to Bryce's valuable test, and re-inoculate on the fourth or fifth day after the first insertion. In this case the second vesicles will have their progress hastened, and they will assume the areola at the same time with the first. This undeniable proof of constitutional affection remains in full force in the vaccine virus of our old stock: I have even produced it when the second insertion was delayed till the eighth day; but were it to lose this power, I should think it right immediately to change the stock, and adopt either Mr. Estlin's or any other equally unexceptionable.—I remain, sir,

Your obedient servant,

CHARLES R. AIKIN.

7, Bloomsbury Square,
April 6th, 1840.

P.S.—At Mr. Estlin's request I sent him some points last June, charged with my old stock of virus taken on the eighth day, which, in fact, is the only period at which I ever use it—I presume, that he might compare its effects with his own. As I am curious to know whether the same similarity between the two occurs at Bristol as at London, I beg to invite him to make the communication.

VACCINATION EXTENSION BILL.

To the Editor of the Medical Gazette.

SIR,

THE bill for extending the practice of vaccination, now in progress through parliament, has been a sufficient time before your readers to enable them to form some opinion of its nature and probable effects.

I must confess my astonishment that it has not already called forth a loud and general expression of disapprobation; and I trust that you will, by inserting this communication, afford me an opportunity of directing the attention of the profession to the obnoxious features of the proposed enactment.

It will be recollected that this bill was introduced into the House of Lords shortly after, and in consequence of, the presentation of a petition from the Pro-

vincial Medical and Surgical Association, which, after shewing the present defective provision for vaccination, and the necessity for a more universal and better regulated system, suggests the remedy in the following terms:—

“That it appears to your petitioners to be the duty of the state to remedy this great evil by appointing regularly educated vaccinators, with suitable salaries, in districts sufficiently numerous to embrace the whole of the poor population of the country, and who shall offer gratuitous vaccination, at stated periods, to all within their bounds; keeping accurate registers of their proceedings, and communicating regularly with the National Vaccine Establishment.”

In attempting, however, to promote the object of the petitioners, the legislature proposes to substitute a totally different machinery, and to entrust to poor-law guardians and commissioners the entire power of appointing public vaccinators, of determining their salaries, of regulating their proceedings, and of inspecting their reports!!

Such a method of encouraging (?) vaccination (I hardly need say) was not originally contemplated by the Provincial Association; and the whole tenor of the Report of the Vaccination Section is adverse to the administration of the poor-law in this particular.

The following appear to be serious objections to the bill:—

1. Since the majority of general practitioners at present administer vaccination to the poor (either in a public, parochial, or private capacity), it is not expedient to withdraw from this numerous body the inducement to continue their services, nor *just* to set aside their claims on legislative considerations, by limiting to Union medical officers (a class comparatively few in number, and widely scattered in location) the facilities and advantages which the measure is intended to provide for a regular and efficient system of vaccinating the entire poor population of the country.

2. For not only paupers, but all persons who apply, may (according to this bill) be vaccinated by the Union medical officers. It is, therefore, calculated seriously to injure the interests of the general practitioner, partly by withdrawing from him some patients who are in the habit of paying him for vaccination, but principally by depriving him of opportunities of gratuitous

vaccination ; which he must be anxious to retain, not merely for the ends of science, but as a means of procuring supplies of lymph, under his own inspection, for his wealthier patients.

3. By entrusting public vaccination solely to the poor-law medical officers, the enactment is calculated, in some localities, to increase the prejudices against, or indifference to, this invaluable protection, which are still too prevalent among the lower orders.

4. Is it reasonable to suppose that the Poor-Law Commissioners and Board of Guardians are properly qualified to superintend the practice of vaccination ; to frame regulations for its performance and registration, and to provide a due supply of genuine lymph ?

The National Vaccine Establishment might, indeed, undertake these duties, but such an addition to the *medical* business of the Commissioners would be positively ludicrous, were not the evident inclination of government to entrust all matters affecting the lives and health of the community to the discretion of a Malthusian board, a cause of painful apprehension to every humane and reflecting mind.

But, 5thly, the most practical objection to the bill is, that it will extend the power already possessed by the poor-law authorities, of *contracting* for the performance of medical duties. After all that has been urged by the profession, and admitted by the Poor-Law Commissioners, against contract, it is marvellous to see so vicious a principle introduced as the main feature of this enactment.

Let the Commissioners speak for themselves:—

“ It is evident that their (the medical officers) tenure, as paid officers, is likely to be more permanent than an engagement under a contract annually renewable, and revisable, at the will of the Guardians ; and this prospect of permanence confers more importance and respectability on the office, and thus has a tendency to secure the services of a better class of officers.”—(See their Report, just presented to Parliament.)

This indirect and unwilling testimony to the inherent evils of medical contracts should decide the question.

But further: Contract frequently involves appointment by “ tender,” especially if, as in the contingency actually anticipated by the proposed Vaccination

Bill, the contract be not taken by the Union medical officer. We shall then, doubtless, see the office of public vaccinator put up by the guardians (as is still done in the medical appointments) to an unprofessional and discreditable competition, the real object being to reduce the customary remuneration.

6. Viewed in this light, the measure is directly at variance with the efforts which the Poor-Law Committee of the Provincial Association have long been making, for the better administration of medical relief under the poor-law ; each of their principal requisitions is set at nought by this enactment — namely, professional supervision, a reduction in the size of medical districts, and a fair scale of remuneration fixed by parliament.

The Provincial Association could not, therefore, consistently support the bill in the present form ; and I have the gratification of stating that the Secretaries of the Association have forwarded, within the last week, a memorial on the subject to the Home Office (and a copy to Sir James Graham, who conducts this Bill through the House of Commons), from which I have taken the liberty of borrowing largely in the preceding observations.

They suggest the introduction of a clause, *directing the payment of a specific sum for each person vaccinated* under the provisions of the act, and state their belief (founded on the representations of several Union medical officers,) that two shillings and sixpence per case would afford the lowest reasonable remuneration for careful vaccination, and for correct registration of the cases and their results.

Although this amendment would not obviate *every* objection that may be raised against the bill, yet it would have the effect of restricting the Union medical officers to *pauper* vaccination, and would thus protect the interests of the general practitioner, who may not be in parochial practice: also, by fixing a proper remuneration for each case, it would encourage a zealous and attentive performance of duty ; and would afford a valuable precedent for legislation on the general question of Poor-law Medical Relief.

Hoping that the course which the Provincial Association has taken, may be pursued, ere it is too late, by those bodies who are in duty bound to protect

the profession—I mean the Colleges and Hall—I am, sir,

Your obedient servant,
H. W. RUMSEY.

Gloucester,
April 18th, 1840.

ON THE
INCREASE OF MORTALITY
AT THE
DECENNIAL PERIODS.

To the Editor of the Medical Gazette.
SIR,

CONSIDERABLE attention having been called to the apparently curious fact of the great increase of mortality at the various decennial periods, I forward you the following table, compiled from the register of births and deaths, as it furnishes almost convincing proof that this irregularity in the ratio of mortality is to be sought for in the explanation that has already been brought forward, viz., that the greater number of those cases in which the age of the deceased is undetermined, are put down under the decennial periods. This table, drawn up from the returns from districts, in some of which the population was mostly agricultural, in others principally manufacturing, shows that the most considerable departure from the regular ratio occurs in those districts containing the greatest proportion of manufacturing population, whilst in those districts chiefly peopled by agriculturists, the mortality at the decennial periods but little exceeds that in other years. This was what might have been expected; for it is evident that, in a population such as that which peoples our manufacturing districts, constantly subject to changes of abode by the vicissitudes of trade, that the number of persons dying at a distance from their friends, surrounded only by casual acquaintances, who are not likely to be acquainted with their age, must be much greater than in an agricultural population, of whom the greater number are born and die on the same spot.

In compiling the following table, I have only taken the number of deaths occurring at the ages of 30, 40, 50, and 60, and compared them with those occurring at the ages of 29 31, 39 41, &c. The first column gives the ratio between the agricultural and manufacturing population; and the second the ratio of the mortality at the decennial

periods, 30, 40, 50, and 60, as compared with that at 29 31, 39 41, &c. Thus, when the proportion of the agricultural families inhabiting a district was to the manufacturing as 1 is to 0.53, the agricultural population being taken as the unit, the deaths at the decennial periods only exceeded those on the preceding and subsequent years in the proportion of 1.246 : 1; but when there is a preponderating majority of the manufacturing population, we find, as in the last line in the table, that the deaths at the decennial periods exceed those in the adjoining years in the proportion of 2.013 to 1.—Your obedient servant,

JAMES BLAKE.

University College,
April 10, 1840.

Proportion of agricultural population to manufacturing.

1 : 0.53	1.246 : 1
1 : 0.64	1.293 : 1
1 : 0.95	1.552 : 1
1 : 3.7	1.357 : 1
1 : 5.5	1.326 : 1
1 : 45.7	1.798 : 1
1 : 68.9	2.013 : 1

Proportion of deaths occurring at the decennial periods above alluded to, as compared to those in adjoining years.

MEDICAL GAZETTE.

Friday, April 24, 1840.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”
CICERO.

THE REPORTS OF THE CHARITY COMMISSIONERS.

HAVING concluded the publication of the abstracts of such of the Reports of the Charity Commissioners as we thought likely to be acceptable to our readers, we may be allowed to offer some few observations on those portions which are of more peculiar interest, and which, in the effort that was necessary to compress materials, already ponderous and very dense, into less than one-fiftieth of their original volume, may have lost some of that degree of prominence which their importance deserves.

Among the confirmations which the

Commissioners' Reports present of several principles which we have often taken opportunity to support, we would point to the fact of nearly £90,000 a-year being possessed by three hospitals, from the accumulated funds of voluntary benefactors, as a proof of the willingness of the public to give more from motives of liberality than they will yield upon compulsion, even to objects whose necessities are equal.

With reference, also, to the propriety of placing the power of distributing the funds in the hands of those who have themselves contributed largely to them, rather than in those of disinterested persons appointed by the legislature, or by any other body, the reports furnish important evidence. They prove, that it is absolutely necessary to hold out the privilege of management, as an inducement, among other motives, to the wealthy to become contributors to hospital funds. Thus, the long-continued dispute which terminated in the virtual removal of the corporation of London from any considerable share in the management of the hospitals of royal foundation, originated in the demands of successive benefactors, that, in return for their donations, they should be admitted to a share in the distribution of the general funds; and while, in a series of years, vast sums have thus been accumulated from the gifts of those to whom no other return was made than an admission to this privilege of management, one cannot doubt, that had this right not been granted, a large portion of these donations would have been withheld. Indeed, this is proved by the contrast which the funds of Guy's hospital present to those of the other two. There, a limited number of governors is appointed, who are not required to be benefactors, and no amount of donation is deemed to constitute any right to the office of governor. The result has been, that, with one exception, no im-

portant sum of money has ever been given to the hospital since its foundation; but that one exception was a munificent bequest of nearly £200,000, by a gentleman who, during his life, had taken an active part in the management of the establishment, and had had the gratification of planning many of the buildings, &c. of which he intended that his own money should defray the expenses. It is no imputation on the benevolence of Mr. Hunt to say, that had Guy's Hospital been managed by a board of Government Commissioners, or any other similarly-constituted public body, his wealth would have flowed in some other direction, over which he could himself have exercised peculiar control.

It is singular that, with many facts of this kind before them, there should still not unfrequently occur indications of a feeling, on the part of the reporters, that it would be better if the management of hospital charities were placed in the hands of appointed boards or paid commissioners. The only thing that could, in our opinion, warrant such a change, would be a proof that the funds of these institutions are already large enough, or too large, for the purposes they are intended to fulfil. In that case, no doubt, a few well-appointed managers, who would make their office their chief business, might conduct all the affairs of a large hospital as well, or perhaps better, than a large body of governors. But if it be deemed desirable that the funds of these institutions, large as they now are, should be still further increased (and we imagine that no one will be inclined to affirm the contrary,) assuredly no more effectual method could be adopted to prevent that desirable object than to exclude the benefactors from all power of disposing of their own donations. It seems to us that it would not be less mischievous than to annul the right which every one now possesses of

leaving his money for whatever purpose he pleases, and to order that all who wish to bequeath property for benevolent designs should leave it to a general fund, from which it should be distributed according to the taste or the judgment of a government-board of commissioners. The comparatively small number of bequests or donations that are made without the specification of some distinct purpose on which they are to be expended, affords sufficient proof that universal and impartial philanthropy is so rare a quality that it is necessary to permit and encourage each individual to give to his charitable aspirations any direction which is most in accordance with his own feelings. In the case before us it is quite clear that the number and amount of donations does now, and always will, bear a direct proportion to the degree in which the donor can order their expenditure; and that if pecuniary support is still required for the hospitals, it can only be obtained by offering in return a share in their management.

It would be absurd to say that this plan of government by benefactors is faultless: it has certainly not a few defects, although far fewer and less important than those which have been attributed to it. For example, upon the evidence of these reports there is not the slightest ground for the charges that have been urged, with as much clamour as absurdity, that governors, under the guise of charity, are, in fact, charitable only to themselves, using their influence to procure trade from the hospital for themselves or their connections. The attention of the Commissioners was directed particularly towards this point, and with no disinclination to the discovery of such practices, but in vain: not one instance could be detected in which a governor had used his privileges for his own pecuniary advantage. Neither do the few faults of the present system lie in the general management

of the funds, for which (at least in the City hospitals, to which only the reports relate,) the business-habits of the greater part of the governors peculiarly qualify them; but rather in those parts of the management which are strictly professional.

It cannot be denied that there is some justice in the remark of the commissioners, that there cannot be a security of competency in the medical staff of a hospital, when its members are selected by those who have not any more power of discriminating between the various degrees of professional capacity, than any other portion of the public. At the same time, amidst the various plans that exist either in theory or in practice in the present day, it would be difficult to find one which with so few faults combines so many advantages. The only tribunal that could have any superiority in respect of competency in judgment over that of the body of hospital-governors, would be a professional one; for as far as we have been able to observe, the appreciation of medical talent is not at all more accurate among those who are exalted in either rank or intellect, than among the average of the common-sense community. No government, for example, as far as we know, has ever shown more tact in the choice of candidates for situations requiring medical talent, than the governors of hospitals generally do; indeed, the former usually exhibits less, because their judgment is apt to be biassed by a greater number of circumstances. But suppose the system of professional tribunals were adopted; how instant would be the beginning, how distant the end, of the influence of professional partizanship and animosity! To judge fairly in such a case, men must be more or less than mortal who could dismiss from their minds all the prejudices of professional attachment or opposition which must in every case exist. Ample experience has shewn that, in the *concours*, there

is often no more security for the best candidate than there is in the system usually adopted in this country.

Neither must it be forgotten, that the unprofessional judges pay for their privilege, and by their payments furnish the circumstances for which the candidates are willing to submit themselves to judgment. The share in the election of medical officers is peculiarly that part in the privileges of the governors of each charity, which constitutes the strongest inducement to them to increase its funds; so that at the present time it is probable that a large proportion of the funds of several hospitals, and perhaps of all the dispensaries and smaller institutions in the metropolis, are derived from the connections of the medical officers, who thus, in their desire to serve their friends, confer a far greater boon upon the poor.

The system of concours before professional tribunals can be practicable, only when the hospital funds are drawn from public sources, and ultimately from general taxation; and if the funds for the charities were at all times sufficiently large and secure, it might not be a difficult task to invent a plan by which the most competent among the aspirants for places upon the medical staff, would be selected with at least as much certainty as the most accomplished candidate in a university examination. But in this country, this object, however desirable, can never be the only one to be kept in view; its attainment must always be prevented from clashing with the still more desirable object of augmenting the hospital funds; and the one must sometimes be sacrificed to the other. The power of appointing the medical staff is one of the greatest inducements to subscribers, and surely very urgent facts of error on the part of hospital governors — facts such as the reports present no example or hint of — should be ad-

duced, before this inducement to benefactions should be cut away. Let the Government interfere, and many of our charities would at once become bankrupt.

But, in fact, the evil of the presumed incompetency in the electors of medical officers, is practically much less than the statement of the possibilities of error would lead one to expect. The Commissioners judiciously point out, as a remedy for this as well as for many other faults, which thinkers who are not lookers-on might expect, the existence of the medical schools, which are now attached to all the hospitals of the metropolis, and of many of the larger provincial towns. The effect of a class of pupils, as they rightly observe, is to put each medical officer upon a constant trial of his skill, by judges who are not only in general competent for decision, but are universally anxious to exhibit their own learning by detecting the errors of those who undertake to be their teachers. Thus there is at the same time insured, a constant effort on the part of each to do the best he possibly can for his patients, so as to secure the reputation which is so valuable to him among the pupils; and each is tried, not by his skill in any task that might be assigned preparatory to his appointment, but in the very work which his office calls upon him to perform. Nor is this all the benefit that the hospitals derive in this respect from the schools; they serve as a kind of training-ground for the future staff, in which, by continued exercise either in lecturing or some other occupation, those stores of knowledge are obtained which no other circumstances could lead to: and in which, moreover, an opportunity is commonly afforded for judging, upon the evidence of a long-continued intercourse, of the fitness of the several candidates for the higher offices. But, in short, with numerous apparent sources of error, this English sys-

tem of election will very fairly stand that test which is by far the severest that can be applied to it, or to many other doubtful points—from the proof of a pudding upwards; and for the general excellence of its result, we would require no further evidence than a fair comparison of the abilities of the hospital medical officers in this and in any other country, either in the present day or in any past time.

PROBLEMS IN MEDICAL ETIQUETTE.

To the Editor of the Medical Gazette.

SIR,

I REQUEST to be permitted to occupy a small portion of your valuable space in proposing to your readers one or two problems on the important subject of medical etiquette. If the medical profession, as a body, are to maintain a good position in society, it can only be effected by the cultivation of mutual respect and forbearance amongst the members. In order to promote this end, it is indispensable to adopt a good system of ethics, in which the conduct of the practitioner shall be determined in every variety of contingency. The circumstances which have suggested these problems are the following, and are related in the third person, with a view of securing perfect impartiality:—

Mr. D. O. Edwards operated in a case of varus of both feet, on the 23d of January last. The patient, a boy about nine years old, after a month's careful treatment, perfectly recovered. A Mrs. Page, residing in the same neighbourhood, and who had a daughter with a deformed limb, saw the boy after his cure, and sent to request Mr. Edwards would call and see her daughter. He complied with the request, and found Miss Page, a young woman 23 years of age, affected with atrophy of the right leg and thigh, and simple talipes of the right foot. He explained to Mrs. Page the nature of the malady, and undertook to restore the limb by division of the tendo Achillis, and regulated muscular exercise, so far as to do away with the use of the heavy iron apparatus

which she then wore, and to render a thick cork sole to her shoe the only aid necessary. Mrs. Page agreed that Mr. Edwards should perform the operation, provided Sir James Anderson, who had previously attended her daughter for hysteria, should say that it would not injure her health.

Miss Page accordingly waited upon Sir James, and brought back a message from him to Mr. Edwards, requesting Mr. E. would call upon him, and "explain his views of the case." Mr. Edwards was then affected with rheumatic ophthalmia, and found it inconvenient to go out.

A few days afterwards, Miss Page called upon Mr. Edwards, stating that Sir James wished her to take the opinion of Dr. Little, and had given her a letter of introduction, and she had come to ask Mr. Edwards if he had any objection to her going. Mr. E. said he had not, and gave her his card, desiring her to tell Dr. Little what he had said as to the nature and proper treatment of her case.

Some days after this interview Mr. Edwards called upon Miss Page to fix the day of operation, when Mrs. Page placed in his hands a letter from Dr. Little to Sir James Anderson, in which, after giving the same view as had previously been given by Mr. Edwards, he volunteered to perform the operation gratis, and suggested that Miss Page should take lodgings in his neighbourhood for the purpose.

Mr. Edwards, having stated to all the parties the sense he entertained of their conduct, received communications in reply.

Miss Page writes thus: "When I saw Dr. Little, I only stated your opinion upon the subject, and gave your card; I did not state that you offered to do it yourself, as I supposed Sir James had mentioned it in his note, and that Dr. Little was referred to merely for his opinion. Dr. L. said he wished to see me again: with this wish I made Sir James acquainted, to which he (Sir James) replied that he supposed I had not informed Dr. Little that Mr. Edwards wished to do it. I said I had not, as I had expected he had mentioned it in his note. Sir James then said he should not know how Dr. Little understood it until he heard from him. It now appears Dr. Little has not had a right understanding," &c.

Sir James, in his note, states, "I am not aware Dr. Little has any desire to operate on Miss Page; nor am I aware she is your patient: she has been under my care for some years, and still is so. The only message I sent to you was to say, that if you called on me I would hear your views, and then give her my advice." Mr. Edwards infers from this statement that Sir James had not read the letter which Dr. Little had written to him some days before.

Dr. W. J. Little observes, "I believe I know my duty to a fellow practitioner too well to contemplate wresting a case from his care. I regarded the wording of Sir James's note as indicating a desire that I should undertake the case, the more particularly as Sir James stated the patient was 'very desirous of obtaining my opinion.' The patient did not inform me that you or any other surgeon had offered to operate, or had ever given an opinion of the curability of the case. She mentioned that Mr. Edwards, of Chelsea (whose card she left) had seen her foot, but nothing more; and the inference from Sir James's note was that she was under the care of no one but Sir James. Perhaps had I been able to spare her the time for a longer interview, she might have communicated to me the particulars of her visit to you, which she omitted to do."

Mr. Edwards being satisfied with Dr. Little's surrender of the case and explanation, wrote him a note exonerating him from blame, and in delicacy to Dr. Little, named Mr. Weight, of Wokingham, as the surgeon who should take the case for the future. Mr. Edwards' ill health prevented him for a week or two from taking any active measures. On the 9th April, however, he received the following communication from Dr. Little:—"Miss Page has again called on me requesting me to perform the operation, stating you have been mistaken in supposing she had consented that you should do it; I should be very happy to throw a case in Mr. Weight's way, but cannot in this instance, as in consideration of Miss Page being Sir James Anderson's patient, and of her urgent request, I have determined to divide the tendon (the smallest part of the treatment), and attend to the mechanical and other treatment myself."

Mr. Edwards did not think proper to comply with this unceremonious setting aside of his claims; but wrote on the in-

stant a note to Dr. Little, refusing his consent to the proposal.

Dr. Little having taken no notice of Mr. Edwards' note, that gentleman infers that Dr. Little has performed the operation.

The above detailed are the circumstances which Mr. Edwards submits to the judgment of his medical brethren. He is conscious that the injuries which he deems have been inflicted upon him, are, from his humble position, of little consequence in themselves to the profession; but as indications of the principles which are to regulate the intercourse of medical men generally, he cannot consider them as of little moment. He would submit the questions in the shape of the following problems:—

1.—Did the sending for Mr. Edwards by the parent of the patient, and the subsequent conditional consent that he should operate, constitute Miss Page *pro tempore* Mr. Edwards' patient?

2.—Did Sir James Anderson's previous attendance on Miss Page for hysteria, authorize him to interfere in the surgical question; to endeavour to remove Miss Page from Mr. Edwards' care; or in short to do more than answer the specific question that was proposed to him?

3.—Did the transmission of a request from Sir James to Mr. Edwards, that the latter should explain to Sir James "his views of the case," imply an admission on the part of Sir James that Mr. Edwards was for the time in surgical attendance on Miss Page?

4.—Was Sir James bound or not in his communication to say, that a surgeon was already in attendance?

5.—Was it impossible for Dr. Little to suppose that; and, therefore, unreasonable to inquire whether the surgeon, who had taken the trouble to examine the case, and to send him his card, had undertaken to treat the patient or not?

6.—Under the circumstances which have been detailed, was Dr. Little, or would any other surgeon in a similar predicament, be justified in resuming the management of the patient?

I have now exercised your permission, in placing my problems before the profession. I think their dispassionate consideration must lead to good, and point out the existence of certain maxims of professional behaviour, the judicious expression of which, in so many propositions, must confer an obligation upon

every rank of medical men. I know no one, sir, better suited than yourself to perform this delicate task.—I am, sir,

Your most obedient servant,
D. O. EDWARDS.

15, Cheyne Walk, Chelsea,
April 15, 1840.

ROYAL MEDICO-CHIRURGICAL SOCIETY.

PATHOLOGICAL DEPARTMENT.

April 21, 1840.

DR. CLENDINNING IN THE CHAIR.

Case of Medullary Tumors affecting the Diploe and Cancellated Structure, in numerous distinct Bones of the Skeleton.

MR. ARNOTT had, on the table of the Society, six different preparations and models, illustrating disease of the bones in a patient who was under his care. He first drew attention to a model representing a large tumor developed on the left side of the os frontis, and extending inwards upon the brain. He shewed also a model of a portion of the brain, which exhibited the surface situated under the tumor flattened and depressed; and he likewise pointed to the skull cap, in which the tumor had been formed. In reference to the disease in the skull, he began by stating that the patient, who was a man of 48 years of age, came to him in November 1836, requesting to have the matter evacuated from a swelling situated on his temple. He recognized the man to be a patient from whom, two and a half years before, he had removed the left arm at the shoulder-joint, for medullary tumor seated in the upper head of the humerus. The patient had perfectly recovered from the operation at the shoulder-joint, and continued from that time in good health. Mr. Arnott suspected that the swelling on the temple, for which the man presented himself again, was a tumor of a similar nature to that which had been seated in the humerus. It was soft and elastic to the touch, and had much the sensation of its containing pus: yet it had never given him any pain, nor had it throbbled. The patient merely wished to get rid of it for its inconvenience in wearing his hat. On further questioning him it was learned, that in the right arm, which was the opposite arm to the seat of the disease, he experienced a certain degree of weakness; for example, he could not freely turn the key in unlocking a door. With this exception, there was no other evidence of the brain being affected by the contiguity of the tumor. To pursue the history of the patient to his death:—He remained nearly

in the same condition, with little increase in the size of the swelling, for about two months. A tumor, apparently corresponding in its nature with that situated on the temple, was then observed on the sternum. He was seized, at this time, with influenza; of which complaint he died, no new symptoms referable to the brain having been manifested in the meantime.

Mr. Arnott observed, that on examining the skull, the tumor which presented on the temple was found to be contained in a space intervening between the pericranium on the one hand, and the dura mater on the other; both of these membranes being extended over the tumor, the one above and the other below. The brain was depressed by the internal lobe of the tumor to a considerable extent, as exhibited by the model on the table; but its structure was sound, as were also the pia-mater and arachnoid covering it. On cutting into the substance of the tumor, it was found that the bone, at the part where the tumor was situated upon it, was completely destroyed; so that after maceration, a large ragged hole was left. The substance of the tumor was soft, and of the colour of currant-jelly, although of firmer consistence. A rim of bone rising from the exterior margin of the hole through which the tumor projected, surrounded the base. Upon sawing through the skull, to expose the brain, it was found to be soft and easily cut with the saw; and on closely inspecting the structure of the bone, it was perceived that the diploe, in circular patches, or circumscribed parts here and there, contained portions of the same soft morbid matter which formed the composition of the tumor. This appearance was more clearly exhibited, when the skull cap was held between the eye and light of the window. After maceration, when the medullary substance that had occupied the diploe was removed by the process of putrefaction, the space between the tables presented the appearance of having been undermined—the tables themselves preserving very nearly their natural structure and relations, being only slightly absorbed by the pressure. It was especially remarked, that no spicula or other projections of bone, extended into the tumor, or grew from any part of the surfaces of the skull, either internally or externally. The disease, on the contrary, was limited in its seat to the diploe; and the morbid matter seemed only to affect the outer and inner plates of the skull, by the absorption which its gradual growth produced. To pursue the examination more minutely, the outer table of the skull was filed down over a considerable extent of the preparation, for the purpose of exposing the diploe and channels of the veins: but it cannot be said that any change of

importance in the structure, beyond what has been already described, was disclosed in this manner.

Mr. Arnott next proceeded to describe the morbid appearances in several of the other bones of the patient's body. He examined the clavicle, scapula, sternum, vertebrae, ribs, and femur; and in all these bones he found disease, analogous to what has been already described as existing in the skull: in all, it was remarkable that the diseased mass occupied the interior, cancellated structure of the bones, or had commenced in these parts; and only involved the cortical structure in an indirect or partial manner. Beautiful sections were presented, to show the tumor completely filling the central cavities and cancelli of the humerus and femur, being only bounded by the cortical layers of these bones. It was noticed, in reference to the sternum, that the two layers of which it is composed were parted from each other more than is natural, apparently by the effect of the tumor contained in the diploe, separating them as it increased in growth. The morbid structure varied in its colour and consistence to a certain extent, in the different bones. In the upper head of the femur, it was of a purple red colour, and presented many of the characters as to consistence and general appearance of the granulations in an open wound. Here Mr. Arnott thought the tumor was exhibited in the earliest stage of its formation: in the sternum, it was harder and firmer; and instead of being of the colour of black currant jelly, had a pale grey appearance, like brain long preserved in strong spirit; which appearances he thought indicated that the tumor had existed for a considerable period in this bone.

All the viscera of the body were examined with care, but in none of them was there any vestige of the same disease which was so extensively developed in the interior of the bones. The lungs alone were morbidly affected; they were gorged with the accumulated secretion of the bronchial tubes, and that to a degree sufficient to account for his having died from the attack of influenza with which he had been seized.

In remarking what were the most important deductions to be drawn from the above case, Mr. Arnott adverted, in the first place, to the extraordinary extent to which the disease was distributed over the bones in this patient. It can only be a matter of conjecture how far the disease had invaded the osseous system generally, when, two years and a half before the death of the patient, he had performed amputation, for disease of the same kind seated in the humerus. It is, however, an interesting fact to bear in mind that the patient survived the operation for that

length of time, and was carried off eventually by a different complaint—the influenza. In common cases of medullary tumor, involving the bones of the extremities, amputation is occasionally objected to, on the grounds that the disease will return in the stump, however early you may remove the limb. In this case, the stump remained perfectly unaffected and sound. It has been stated, by Cruveilhier, that when the malignant disease in question originates in the bones, we are more especially sure of finding traces of it in the different viscera. This remark does not at all accord with what was observed in the present case. The successful issue of the amputation may have been due to two particular causes; first, as the disease evinced a peculiar disposition to affect the bones more than any other tissues, we may understand how the integuments and muscles healed favourably, and the stump continued sound. Secondly, as the limb was removed at a joint, and there was, therefore, no sawing through of any of the bones, so as to expose the diploe, which was the especial seat of the disease, the danger of the disease re-appearing in the limb which was the subject of the operation, and causing an unhealthy stump, was much less than it would otherwise have been.

Adhesion of one of the Semi-lunar Valves of the Aorta to the surface of that vessel, and closure of the orifice of one of the Coronary Arteries.

Dr. Kingston exhibited to the society a portion of a heart and root of the aorta which he had removed, on Friday last, from a patient whom he examined in company with Mr. Walsh. On inspecting the preparation, two of the valves, at the orifice of the aorta, were seen, together with the orifice of the right coronary artery: but the third valve, at first view, seemed deficient, and no trace could be perceived of the orifice of the left coronary artery. By examining the parts more closely, it was observed that the valve which appeared deficient, and the part of the parietes of the aorta in relation with it, were incorporated into one substance, being united together by the intervention of atheromatous deposit. The amount of this deposit was not considerable: hence the valve, so far as its structure could be recognized as such, or be distinguished from the coats of the aorta, was not separated from them to more than a quarter of an inch. The opening of the left coronary artery was blocked up by the atheromatous deposit just described; and in such a manner that, in order to discover its situation, it was necessary to introduce a probe into the coronary artery, where it encircles the base of

the heart, and to direct the point towards the aorta. When this was done, the probe was found obstructed at the orifice; and it could only be exposed by cutting into the diseased part between the valve and inner coat of the aorta, and then the commencement of the coronary vessel, with the probe within it, was seen. The aorta was loaded, on its inner surface, with atheromatous deposit and calcareous conerctions. The left ventricle of the heart was dilated, and its walls comparatively thin. The lungs presented the appearances usually seen in cases of chronic bronchitis; and circumscribed clots of blood, termed apoplexy of the lungs, were found in several parts of their substance.

The patient, from whom the specimen above described was taken, was a female, fifty-three years of age. Some years before her death she had suffered from rheumatism, and had also dyspepsia. In addition to these complaints she was subject to violent dyspnœa. Occasionally, when walking, she would become suddenly faint, and fall; and this syncope was attended with paroxysms of difficult breathing. At night, she sometimes awakened out of her sleep with similar sensations, and had to sit erect in order to relieve the dyspnœa. These attacks became more frequent and severe subsequent to much distress of mind, brought on by her husband meeting with an accident, of which he soon died. In observing the sounds of the heart, over the semilunar valves, the first sound was only marked by a slight roughness; in the second, there was a decided, strong, blowing murmur. The pulse was generally found regular.

Case of Placental presentation.

Mr. Bainbridge brought, for the inspection of the Society, a uterus at the full period, in which the placenta adhered to the parts around the os uteri. The woman had been attended, shortly before death, by the assistant of a general practitioner in her neighbourhood, and Mr. Bainbridge was only called to make the post-mortem examination. He learned that the patient, three weeks before her death, and when near the period of her confinement, was seized with uterine hæmorrhage, just after straining to lift a heavy bucket of water. The hæmorrhage continued to a certain extent daily, until she died, exhausted by the loss of blood, not having been seen, in the meantime, by any medical man. The placenta, upon dissection, was found adhering, with unusual firmness, to the walls of the uterus, with which it was in contact. The principal part of the blood-vessels of the uterus were seen congregated towards this part. The os uteri was only dilated to an inconsiderable degree, and was peculiarly rigid and unyielding.

ROYAL INSTITUTION.

Friday, April 10th, 1840.

MR. NASMYTH delivered, at the Royal Institution, a very interesting lecture,—*“On the Functions of the Mouth, and the Structure of Recent and Fossil Teeth.”*

It comprehended a sketch of the process of assimilation, in the most extended sense of the term, as denoting that organic function by which anything whatever is converted into the nature or substance of another. The lecturer explained that it was to the exercise of this function that all vital changes were to be referred, and that, were it paralyzed, the tide of life, which now holds on in one steady, undeviating, unremitting course, from the lowest vegetable up to man, would instantly become stagnant. Nor is the organic world alone affected by its operation: the crust of the earth fulfils the office, as it were, of a general mouth and stomach to plants, from which their roots unceasingly derive nourishment; and the air contributes to animal assimilation by modifying the blood in the lungs, whilst, in plants, it acts in a similar manner on the juices in the leaves. Thus is every part of this globe pervaded, as it were, by the current of assimilation. With respect to the changes constantly taking place in the animal frame, Mr. Nasmyth strikingly remarked, that it is only after death has entirely removed the whole body from the sphere of vitality that any part of it assumes a character of permanency; but that then such is the indestructibility of some parts of that same animal structure, which, whilst living, had been undergoing incessant change, that they will be found to have endured through a lapse of countless ages, the extent of which the geologist alone can calculate, and to be altogether unaffected by the convulsions which, during that vast period, have rent the bosom of the earth in which they have been reposing. The lecturer then proceeded to describe the mouth as the original and essential constituent of the assimilative apparatus, which, he said, even in its most perfect form, may be regarded as merely a complicated extension of the buccal cavity, whilst, in its simplest form, it comprises nothing more than a rudiment of the latter. In the lowest classes of animals, however, it must be remembered, the different forms of the organization of the mouth are as peculiar to their respective species, as strictly adapted to the particular requisitions of the individual, and as typical of the whole system of the animal, as in the highest. The lecturer next gave a brief sketch of the organs of assimilation in their progress from their most elementary condition in

the zoophyte to their most perfect in the mammalia. Wanting time to particularize their especial modifications in each class, he selected the mouths and teeth of aquatic and amphibious animals for more prominent consideration, shewing how they were in beautiful harmony with their peculiar requisitions. The mouths of the dolphin, crocodile, shark, and lepisosteus, were exhibited as incomparable examples of machinery for seizing, holding, and dividing the bodies of their slippery prey. Indeed, the whole of this part of the discourse was illustrated by a great variety of valuable, curious, and appropriate preparations. The teeth of the crocodile and shark are so often broken and destroyed in their ferocious combats, that nature has provided them with many successive and complete sets of teeth, which may be brought into use as required. Other teeth, as those of the pike, become ankylosed, or fixed firmly and immovably to the jaw, so that they cannot be removed in even their most violent encounters. Specimens of both of these were exhibited. The lecturer then shewed, in an admirable manner, that activity and energy, in the character of an animal, were always accompanied by rapidity of assimilation and strength in the assimilative apparatus. This was exemplified by comparing the fish just mentioned with the whale—a toothless animal—which, floating at ease on the surface of the deep, sucks in diminutive, unresisting prey. With the same view, birds of prey were compared with the grass-eating goose—beasts of prey with herbivorous animals. The truth of these observations could be demonstrated even in the human species: a well-developed mouth, furnished with strong and powerful teeth, capable of perfectly performing the function of mastication, introduces the food into the stomach well prepared for complete digestion, and, of course, accelerates that process which thus duly nourishes the system, and obviates all redundancy and oppression: under such circumstances, the osseous system is also well knit, and the chest well developed—all in consequence of the activity induced by the due and complete performance of the function of digestion. The character of the animal, the lecturer ingeniously said, is often beautifully expressed by the mere apparatus of the jaw. Thus the powerful teeth in the front of the mouth of the horse, both above and below, indicate his celerity; whilst the more sluggish ox has comparatively weak teeth in the upper jaw, and none below. The maxillary apparatus of the herbivorous animals amongst the mammalia shews that they are destined to be the drudges of mankind. In man we observe none of the manifestations of

extreme activity on the one hand, or of sluggishness on the other, which characterize the different orders of lower animals; but in him the faculties which are distributed in various degrees to the other species are so concentrated as to produce the most complete harmony, and the most extensive range of action; in like manner his teeth are the most harmoniously developed and perfectly formed. The limits of a single discourse being altogether insufficient for tracing the various parts of the mouth in the progress of their development, the lecturer now selected the teeth for the exclusive consideration of his audience. All teeth, he said, may be regarded as cones or wedges, of which there may be one or more in each tooth more or less acute. The grinders of herbivora consist originally of several wedges or cones. The front teeth or incisors are generally wedge-shaped. The canines are generally simple cones; and the grinders of the carnivora present a combination of the latter. Sometimes the teeth are composed of a series of cones or wedges bound together at their bases, as in the grinders of the elephant, in the beautiful little incisors of the flying lemur, *sus æthiopiensis*, and others. The only exception to the cone or wedge-shape, in the construction of teeth, is presented by those of several fishes, such as the wolf-fish, the *myliobatis*, &c., which are in the form of pavements of various kinds, and which are for the purpose of breaking down the hard shells by which the bodies of their prey are covered and defended. The simplest form of perfect teeth is that in the human subject. It is a remarkable fact that no other conformation of mouth than that of man could admit at once of perfect articulation, and of a proper mastication of food. "The mouth," said Mr. Nasmyth, "may be considered to fulfil the most essential part in the animal and intellectual life of man; for it is not only in him, in common with other animals, the essential and original element of the apparatus of assimilation, but it is also the organ of intellectual expression, and as such is equally indispensable to the existence of the race; it is also the grand agent for the improvement of its condition, and for the communion of social life. There is a most exalted contrast, and, at the same time, an evident fitness, in the circumstance that the same organ which is the instrument in the hands of the Almighty to build up the wondrous and upright structure of his own image, is the very one he has also chosen to sound his praises, and make him known on earth."

The lecturer next proceeded to treat of the development and structure of the teeth; and this portion of his subject was illus-

trated by a variety of splendid diagrams. The teeth may be said to be formed by a re-duplication of the mucous membrane of the mouth called the pulp, which Mr. N. has discovered to be composed of cellules or vesicles, in which the ossific matter of the ivory is deposited: the ivory is, therefore, neither more nor less than ossified pulp. Of the reticular or formative surface of the pulp, the lecturer here exhibited some particularly interesting coloured drawings. With respect to the ivory, the doctrine of Liewenhoeck, that it is tubular, has lately been revived; but Mr. Nasmyth stated that, according to his researches, the fibres of the ivory were baccated, and presented the appearance of rows of beads, as he shewed in various drawings. The interfibrous substance he had also discovered to be decidedly cellular. When the growth of the ivory is completed, the primary function of the pulp ceases; but its residue Mr. Nasmyth has often observed to ossify under the influence of disease in the higher animals, and normally in the lower. Interesting examples of the normal occurrence of this irregular osseous formation are presented by the teeth of the sloth family; and those of the fossil megatherium are very interesting examples of it. It occurs generally in the teeth of all fishes, in the walrus, and many others. Mr. Nasmyth has thought it worthy of being ranked as a distinct fourth tooth-bone substance. The enamel which surrounds the ivory he has discovered to be distinctly cellular, and characteristically so in different animals. He has also traced on the surface of this substance a capsule, which had escaped the notice of preceding writers. A coating has long been observed, and acknowledged as most obvious, on the grinder of the elephant, where it fills up the spaces, which would otherwise be unoccupied, between the layers of enamel, cementing the whole of this convoluted compound-tooth into one solid mass. It is to be observed in all teeth of this kind, which are required to perform the office of a grinding-stone in pulverizing the food: and this substance is provided in order to fill up the interstices, and that there may be produced a succession of surfaces efficient for that purpose. The surface presents three substances in succession, differing in texture, hardness, shape, and disposition. The enamel is, of course, the hardest, and presents a beautiful undulating edge. The process of trituration wears down the ivory on the one hand, and the cement on the other, these being of softer texture than the enamel, and thus an irregularity of surface is necessarily produced. The cement being again a little softer than the ivory, a most efficient grinding surface is kept in constant order by the very act and habitual exercise

of the function of mastication. This beautiful adaptation of means to an end, is only a single instance of the design which is demonstrated in every part of the machinery of the mouth. Mr. Nasmyth stated, that, in pursuing this inquiry, he had found, that this capsule of *crusta petrosa* is present in an attenuated state, and can be demonstrated in a great number of teeth, which have been hitherto considered devoid of any covering at all external to the enamel.

The lecturer concluded his eloquent discourse, by showing the importance of the study of the teeth in geology. From their being so characteristically organised in different animals, he said, they became much more valuable guides than fossil bone. Certain fragments of fossil remains can be demonstrated to perfect conviction to be fragments of teeth; and, from examining these by the microscope, they can be proved (so typical is their structure) to have belonged to animals of a certain order and conformation. Put in possession of this scrap of information, we can further proceed to delineate the animal in each particular case in all its details, with a degree of certainty nearly mathematical. From this knowledge follows necessarily an idea of the country or locality in which alone the animal, thus restored, could exist; and hence, from an examination of minute, insignificant, and, to common observers, utterly worthless fragments of tooth-bone—from slight particles of crumbling matter—we derive the means of contemplating whole regions of the face of the ancient globe, covered by its animal tenants.

Mr. Nasmyth finally said, that he had been led to the study of the structure of the teeth, from his having considered it his duty to investigate the novel doctrines which had been lately propounded, in the hope of their throwing new light on maladies daily passing under his notice. And this duty, like all others which are executed with willingness and alacrity, had been to him a source of unmingled gratification; for, in performing it, he had not only been rewarded by arriving at a comprehension of many phenomena of disease which had been hitherto obscure, but had been so fortunate as to establish results which would, he hoped, constitute some advance in this department of anatomical science.

LIVERPOOL MEDICAL INSTITUTION.

DR. FRECKLETON IN THE CHAIR.

Mortality of Liverpool.

DR. DUNCAN stated, that in consequence of public attention having been lately

drawn to certain remarks which had appeared in various newspapers, on the great mortality of Liverpool, compared with that of other large towns, he thought it proper to bring the subject under the notice of the meeting. The remarks alluded to were founded on the statements made by Mr. Farr, and published in the first annual report of the registrar general. These statements, however, it should be known, referred to the limited period of six months only, viz., the latter half of the year 1837, a period much too short to justify the deduction of any general inference.

During that half-year it was true the mortality of Liverpool was very great, being as high as 1 in 28, while in Manchester it was only 1 in 38, in London 1 in 36, in Birmingham 1 in 45, and in Leeds 1 in 55. But it so happened that the period in question was the most unfavourable for Liverpool, and the most favourable for the other towns, which could possibly have been selected for a comparative statement of mortality.

In 1837 we were visited by three epidemics: influenza early in the year, and subsequently by typhus fever and small-pox, the latter having been more prevalent and fatal than in any former year, perhaps, since the introduction of vaccination, and having caused nearly one-fourth of the whole number of deaths occurring between the 1st July and the 31st December. The burials within the parish of Liverpool, during the year, exceeded by 1000 those of any other year on record, not excepting 1832 and 1833, when the cholera was epidemic here. The deaths from epidemic diseases generally, during the latter half of 1837, amounted to 34 per cent. of the total number of deaths: while in Manchester they amounted to only 24 per cent.; in London to 26½; in Birmingham to 17 per cent.; in Leeds to 18 per cent.; and in the kingdom generally to less than 22 per cent. In Liverpool, with a population less than one-sixtieth of the population of the kingdom, the deaths from small-pox formed nearly one-ninth of the whole number of small-pox deaths throughout the kingdom; while the deaths from typhus fever amounted to nearly one-seventeenth of the whole deaths from that disease. London and Manchester come nearest to Liverpool in the mortality from typhus; but in neither of these towns was the proportion much more than one-half that of Liverpool, as compared with the population. But the most convincing proof of the fallacy attaching to conclusions drawn from limited data, are to be found in a comparative statement of the mortality of Liverpool and other towns during the half year subsequent to that which had been selected by

Mr. Farr, viz. the first half of 1838. During this period we find, from the same returns, that the mortality of Liverpool had fallen from 1 in 28 to 1 in 34; while that of Manchester had increased from 1 in 38 to 1 in 31; that of London, from 1 in 36 to 1 in 31½; of Birmingham, from 1 in 45 to 1 in 36; and of Leeds, from 1 in 55 to 1 in 45: so that, during this half year, the mortality of Liverpool was actually lower than that either of Manchester or London, and very little higher than that of Birmingham. It was also considerably below that of Edinburgh, and very much lower than that of Glasgow: the mortality of the former, during the twelve months between May, 1837, and May, 1838, having been 1 in 29, and that of Glasgow 1 in 24.

Rupture of the middle Meningeal Artery.

Mr. Craig related the following case:—In the month of December, 1838, a man, apparently about 50 years of age, was carried into the North Dispensary by two policemen, who had found him lying on the street in a state of insensibility, occasioned, as they supposed, by his having been knocked down by a car.

The skin above and around each eye was severely contused, and much swollen. He had been placed on his back, and was breathing calmly. His breath had a strong alcoholic fœtor. When spoken to sharply, he muttered a word or two, and immediately relapsed into his former state; he threw up his legs, on being pinched: there had been no vomiting. In the course of half an hour he became more sensible, and when disturbed would raise himself into a sitting posture.

I then had him conveyed to the Northern Hospital, where he remained for eight days, after which time I again saw him. Upon inquiry, I learned from Mr. Arnott, that he had remained in the state in which I first saw him till the following morning, when he had got out of bed, and seated himself by the fire. On being spoken to, he looked up with a vacant stare, said nothing, and returned to bed. He then began to manifest symptoms of aberration of mind. At one time he was so violent, that he had to be tied to the bed; at another so calm and rational, that he was allowed to walk up and down the ward. All this while (a period of six days) his mouth and tongue were foul, and his bowels obstinately constive. He presented all the appearance of a person in an advanced stage of typhus fever.

On the seventh day after the receipt of the injury, his wife having called to see him, he requested to be taken home; and, with her assistance, accomplished it, a distance of a mile, in the course of an hour and a half: he was then sensible, with the

exception of now and then making an insane remark. Next morning he got up, dressed, and went down stairs; when he was again observed to be more insane. Shortly afterwards he undressed himself, and went to bed, where he was found soon afterwards in a state of stupor bordering on insensibility.

When I saw him on the following morning, (the 9th), he lay on his back in a state of stupor, muttering incoherently, and occasionally yawning; his arms were rigidly bent, and he appeared very much averse to their being extended. The contusions on his face had nearly disappeared; but there was a small scab over what had been an abrasion on the right temple. His mouth and tongue were foul, and coated with a dark, slimy mucus; his gums appeared slightly affected with mercury; and his breath had its factor: his pupils were dilated; his bowels were costive; had passed water freely. Pulse small and rapid.

10th, Much the same.

11th, Erysipelas had attacked the face, commencing at the abrasion on the right temple. He was now more sensible; and, on being asked where he felt pain, he put his hand to the left side of his head.

12th, Erysipelas extended all over face and forehead. Rather more sensible.

13th, Erysipelas declining; perfectly sensible; complaining of acute pain in right knee, which he said was caused by the wheel of the car, by which he had been knocked down, passing over it. Shortly after my visit he became again insensible; in which state he continued for about three hours, and died.

On dissection, seventy hours after death, — Cellular substance, under scalp, ecchymosed (filled with blood) throughout nearly whole extent; and, on laying open skull, a fracture was found, extending along the whole course of the left squamous suture, and depressed about three lines. Upon the dura mater, covering the fore part of the anterior lobe of the left hemisphere, there lay about an ounce of coagulated blood, alongside of which was a cavity or depression which might contain a hen's egg. Blood had evidently proceeded from the middle artery, which was torn across. Between the folds of the arachnoid, the superior surface of the left hemisphere was covered by a thin layer of blood, and the veins of the pia mater under this were highly engorged. The base of the middle lobe of the right hemisphere was broken up and softened, the consequence of laceration, to about the size of a pigeon's egg, and appeared a red pulsataceous mass. The whole of the brain was more vascular than usual, but there was no lymph effused on any portion of the arachnoid.

On laying open the right knee, about

two ounces of pus, mixed up with a little synovia, was found in the cavity of the joint. The synovial membrane was injected in several places, but there was no ulceration.

THE LIVING SKELETON.

FROM a notice of the sittings of the Royal Society of Medicine of Bordeaux, published in *Froriep's Notizen*, October, 1839, it appears that the man, Ambrose Claude Saurat, who, some of our readers may remember, was exhibited in this country about 15 years since, is still a living skeleton. He has lately been carefully examined by the Royal Society at Bordeaux. From their description of him it appears, that except in a partial loss of the use of his extremities, his condition has not materially changed. He can still breathe freely, and has no particular pain about the chest. He digests well, and never has diarrhoea, though he is sometimes constipated. His appetite is tolerably good, but he eats little, and adopts a very regular regimen. He prefers the flesh of young animals, and avoids pickled meat, wine, and spirits. His daily consumption of food is only 12 ounces.

Saurat's intellectual faculties are still good: but his memory has decreased for many years. His sexual appetite is still undeveloped, and he has never had any intercourse with women. He enjoys quietude, and has no cares or mental suffering. He often has singular dreams; in which he hears music, and thinks he is actively exerting himself. He sweats profusely at night, and especially after drinking cold lemonade. He cannot bear a dull heavy atmosphere; but the climate of Italy exactly suited him.

The deformity of his hands and feet (and he can now neither walk nor stand), was preceded by dragging pains in his extremities, which commenced 10 or 12 years ago. The power of moving them was gradually lost; but he had no pain in the head or back, nor any remarkable pain in the abdomen.

After Saurat had been examined, and had given the account of himself, from which the above is abstracted, in a very clear manner, his abnormal condition was more accurately inquired into.

His head is a little turned towards the right side: his eyes have a quiet dull expression; his complexion is pale and fixed; the left side of the face is thinner than the right; the mouth is large, and the right corner of it is remarkably drawn downwards.

His chest has a deep depression on the median line; the ribs, and especially those on the left side, are very much curved; the antero-posterior diameter of

the chest is about 4 inches; the spine is very much curved to the left side, but the curvature alters according to the mode in which the trunk is supported. Percussion detects a fuller sound on the right than on the left side; and there is a slight dulness on the left side behind. With the stethoscope, the respiratory murmur can scarcely be heard on the anterior and right side of the chest: but on the left one hears even without the unassisted ear a distinct rubbing sound. The respiration is chiefly effected by the abdominal muscles, for the ribs scarcely move. He inspires 24 times in the minute; his radial artery beats from 80 to 84 times in the same period.

His abdomen presents nothing peculiar; it is yielding and tolerably normal in its development and form.

In the genital organs, nothing marked is to be observed.

The extremities are incredibly emaciated, especially the hips, thighs, shoulders, and upper arms. His hands and feet are curved and swollen; the fingers are hook-like and almost immovable.

Saurat has got together a respectable property, and has a small estate in the district of Mans, where he takes care to pass the winter.

COLLEGE OF PHYSICIANS' DEGREES.

To the Editor of the Medical Gazette.

SIR,

I AM induced to request you to insert these few lines, in order to do away with a very prevalent notion concerning the recent regulations of the College of Physicians. Many of my acquaintances, and I believe many others in the profession, still have an idea that it is necessary to graduate at some university before applying for the license at the College. Now it ought to be generally known, that the College can and do grant the *degree and title* of Doctor of Medicine, to those who pass examinations for licentiates or extra-licentiates, whether they have obtained degrees elsewhere or not; and that the College possess this power by as clear and legal right as any university in the kingdom. This is, however, not generally known, and a friend of mine who recently graduated at Edinburgh, assures me he would never have taken the trouble if he had known it could be done in London. I need not point out the advantages of obtaining a degree from an institution which gives at the same time a legal title to practice.—I am, sir,

Your obedient servant,

M.D. EDIN. ET LEYDEN.

Strand, April 16th, 1840.

MR. MAYO.

To the Editor of the Medical Gazette.

SIR,

WILL you have the goodness, by publishing this note, to afford me the opportunity of disavowing the having authorized the proprietor of Holloway's ointment to use my name in his advertisements, and of mentioning, that having made trial of this preparation, I do not believe it to be more efficacious than any other of the detergent ointments that are in common use.

I am sir,

Your obedient servant,

HERBERT MAYO.

19, George Street, Hanover Square,
April 22, 1840.

SOCIETY FOR WIDOWS AND ORPHANS OF MEDICAL MEN.

WE beg to call attention to the advertisement announcing that the Annual Dinner of this excellent Institution will take place to-morrow—Saturday.

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, April 14, 1840.

Age and Debility	22	Inflammation	9
Apoplexy	3	Bowels & Stomach	1
Asthma	4	Brain	2
Cancer	1	Lungs and Pleura	4
Consumption	20	Mortification	1
Convulsions	17	Paralysis	2
Dentition	3	Small-pox	1
Dropsy	4	Spasms	1
Dropsy in the Brain	7	Tumor	1
Fever	5	Unknown Causes	73
Fever, Scarlet	3		
Fever, Typhus	1	Casualties	1
Hooping Cough	8		

Decrease of Burials, as compared with the preceding week } 115

METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.*

April.	Thermometer.	Barometer.
Wednesday 15	from 29 to 65	29.84 to 30.92
Thursday . 16	30 67	29.99 30.08
Friday . . 17	38 59	30 10 30.06
Saturday . 18	32.5 63	29.97 29.90
Sunday . . 19	32 63	29.87 29.84
Monday . . 20	30 65	29.84 29.63
Tuesday . . 21	41 63	29.97 30.03

Wind S.E. and S.W. on the 15th; N.E. on the 16th and three following days; W. on the 20th; and S.W. on the 21st.

Except the 21st generally clear. A shower of rain fell on the afternoon of the 15th.

Rain fallen, .05 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, MAY 1, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.
Surgeon to the St. Marylebone Infirmary.

DISEASES OF VEINS, *continued.*

VARICES — *their Nature — Varieties — Treatment by Compression — Ligature — Incision — Caustic — Needles — Extirpation.* — MUSCULAR AND TENDINOUS SYSTEMS — *Wounds — Contusion — Ruptures, Retractions, and their Treatment.* — CLUB FOOT — *Nature — Variety — Modes of Production — Modes of Treatment.*

VARICES.

Nature. — A varicose condition of the venous system may exist at any part of the body, but is most commonly seen at the lower extremities. The state may be a simple dilatation, without any very evident change of structure or loss of contractility; it may consist of uniform dilatation with thickening, when the vein presents certain of the characters of an artery, and remains open upon section; it may consist of an unequal dilatation, with thickening or thinning, and the valves may be partly destroyed.

Symptoms. — The condition is characterized by certain external signs; the veins may resemble projecting knotted cords, straight or sinuous, variable in size, usually soft to the touch, not ordinarily accompanied by any considerable change in the skin over them; sometimes, however, it is bluish; sometimes bronzed; they increase in size under exertion, and the vertical position, rapidly diminish, or gradually disappear under pressure, or the horizontal position. Strictly speaking these are varices; but under the same

term have been included lobulated or knotted tumors, with large bases, irregular form, soft consistency, violet colour, not unlike a bag of leeches or earth worms—these are varicose tumors.

Where the dilatation is uniform, for some time there is no apparent change of structure either in the parietes or the valves; the vein does not become sinuous, nor unequally thinned, but preserves a thickness proportioned to the size of the vessel: this condition scarcely merits the name. But this enlargement may be accompanied by thickening, and this state is often well seen in the trunk of the saphena—rarely in its branches: we then find this vein forming from the groin to the lower part of the leg an uniform projecting cord, as large as a turkey quill, round, resistant, almost straight, presenting only a few windings. The calibre of the canal is augmented, and, when a section is made, it remains open: the internal membrane is not thickened; it is the middle tunic, if so it may be called, which is thickened, and gives to it its artery-like character. When the dilatation is unequal, with change of structure, the disease is most commonly found to affect the saphena trunk at the lower part of the thigh, the leg, and its branches; the vessel, in this case, is alternately enlarged and constricted. If we hold a vein in this state between the eye and the light, it is evident that the thickness is unequal; extremely thin at some points—very thick at others; but the vein is cylindrical. When the vessel becomes sinuous, it resembles somewhat the character of the colon, and the valves undergo great changes, they do not extend so far across the vessel, and, at their bases, there are often to be found sinuses not unlike those above the valves of the aorta. As the disease proceeds, the curvatures increase until the vessel may acquire double or triple its natural length. The internal tunic is then

thickened, the valves more or less completely destroyed. These sinuses or pouches increase in size, and occasionally contain coagulated or fluid blood: this may depend upon the development of chronic inflammation. The cellular tissue around the vessel is indurated; sometimes, indeed, though rarely, it is transformed into a cavernous or erectile tissue.

In the order of frequency of the occurrence of the disease, the internal saphena takes the first place; then comes the external, which does not ordinarily suffer until the internal has been some time affected; the veins of the pelvis, those of the spermatic cord, the rectum, the scrotum, the labia, &c. The disease usually affects different branches of the saphena—rarely at the same time do the whole of the subcutaneous veins of a limb suffer; it usually exists at the same time in both legs, but unequally. I have found the disease most frequent on the right side, in the proportion I have already indicated in a former lecture. The greater number of cases of partial dilatation of the saphena trunk are seen in muscular men, in whom the circulation is energetic. The disease is rarely seen in children; at the time of puberty it is apt to be manifested; but between thirty and forty is the most common period of its occurrence—a period when men take strong exercise, and women have borne children; after that it becomes so common, that out of a hundred very old persons you will not see above seven or eight without it. Briquet says, of fifty men, all under thirty, whom he examined, he found four varicosed; of thirty women, under thirty, he only found one varicosed; of sixty men, passed thirty, he found fifteen; and of ninety-three women of the same age only twelve; of a hundred and fifty-eight old men, he found fifty-three, and, of three hundred and ninety old women, he found only thirty so affected. It is, therefore, shewn that the disease is more frequent in man than woman, since, of two hundred and fifty-eight men, there were seventy-one varicosed, while, of four hundred and eighty-three women, only forty-two were thus affected. In man it principally affects the trunk of the saphena and its larger branches; in woman, the cutaneous branches. The vertical position tends more than any other circumstance to this condition, therefore it is more frequent in the poor than the rich: soldiers, painters, porters, waiters, washerwomen, cooks, are particularly exposed to the disease.

Among the efficient causes are the lateral pressure of the column of blood, which is increased by the vertical position, contusions by which the venous parietes may be enfeebled, abdominal tumors, obesity, gestation, ligatures around the limbs,

which interfere with the venous circulation, and other causes to which I particularly alluded when speaking of varicose ulcers. It has been said that the disease increases with age: this is true up to a certain point, but when people get too old to labour, then the dilatation is lessened.

The disease may commence in any region of the limb: in a strong man it may begin in the thigh, and very gradually finds its way down the leg; oftener it begins in the feet and legs. When moderate, it occasions little inconvenience, but when considerable, the numbing sensation which it occasions is often very great.

If we incise a large varix, the vein is quickly emptied up to the next valve; at another time, if in a varix we tap upon the vein in the thigh, an undulation may be discovered in the middle of the leg. In varices, if we make a section, the blood is often scarlet; the jet is strong, sometimes interrupted.

When the vessels of a limb have been long varicosed, the adjoining cellular tissue becomes indurated, the legs are tumid towards evening, and are hot and painful: in the labouring classes the skin is hardened, the cellular tissue lard-like, the limb cold, hard, and pasty, as large below as above, and it has great tendency to ulcerate. The ulceration does not extend above the knee—what is the cause of it?

The condition may give rise to phlebitis, especially when there is ulceration, or when a varix has been contused. It may give rise to the development of phleboliths: this name is applied to small concretions which are met with in the interior of veins, and which are formed of whitish concentric strata; they are round, and vary from the size of a millet seed to that of a pea. They are usually found in the diverticula or dilatations of the veins, and are, it is believed, formed by fibrine.

Veins in this state may be perforated: this may happen during gestation, but rarely during a first, and generally in women whose occupations oblige them to stand long. The part where the vein gives way is usually not far above the inner ankle. In some persons it is preceded by slight pain and symptoms of superficial inflammation. In others, a round spot is presented; it enlarges and becomes ecchymosed, ulceration takes place, and the vein is opened. During an effort all gives way, and blood flows, sometimes by an oozing, sometimes in a jet, though the opening is hardly perceptible, and slight compression suffices to arrest it. This state is, as we have already seen, a frequent source of ulceration.

Treatment.—In the treatment of this disease many means have been employed; Hippocrates pricked them, Celsus recom-

mended that they should be cauterized, or removed with a cutting instrument, Ætius speaks of cauterization and the ligature, other persons have recommended compression; but the greater number have counselled excision. Modern authorities have advised palliatory means.

Compression has been more largely employed for this purpose than any other agent; but, whether in the form of a laced stocking, or a bandage, it must be used for many years, and even then may leave the patient no better than it found him: it is difficult to maintain it equably, and, failing that, it will be injurious.

The *ligature*, recommended as we have seen at a very early period, was abandoned, until Home, Carmichael Smith, Travers, Physick, and Beclard, again brought it into notice: they believed that no reasonable apprehension need be entertained of its occasioning phlebitis, but a contrary opinion so universally prevails that in this country it is rarely employed at present. The consequences of the ligature are obliteration, and the passage of the blood along adjoining branches. The circulation is as much more easily carried on, that there are two orders of vessels through which the venous blood may circulate. After the ligature many patients complain, for some days, of feeling the blood mounting up, and distending the veins near the ligature, but that soon ceases, and the subcutaneous veins become distended. At the moment of tightening the ligature, pain is felt, slight inflammation is developed at the edges of the wound, and trifling suppuration, an uneasy tensive creeping sensation is experienced from the point where the ligature is applied to the lower part of the limb, and, for four or five days, the vein continues tense; this gradually subsides, and the blood coagulates. The ligature very rarely comes away before the sixth or after the twenty-second day; usually it happens between the seventh and the fourteenth day; the wound soon cicatrises after the ligature comes away, the veins contract, and, by the end of a month, they are small and solid, containing a coagulum which is ultimately completely absorbed. All these circumstances pass in the inferior extremity, as to the superior, the blood escapes at the moment the section is completed; moderate inflammation is developed, the parietes are thickened, contracted, and ultimately disappear. In some cases, at the end of a few months, the varices which had disappeared return, but are much less troublesome than before. This may be owing to the ligature having been applied close to a joint where collateral veins joined the trunk, the circulation continuing, the formation of a coagulum is prevented.

Transverse incision of the vein has been employed to a considerable extent in this country, with the idea that the dangers and inconveniences of the ligature might be thus avoided. But it was shewn that this object was not attained. Brodie, believing that the want of success was owing to the vein being exposed too largely, proposed that a narrow knife should be passed under the vein, and the section should be made without exposing it; and to render this more certain the integument was to be drawn aside when the puncture was made, so as to produce a want of parallelism between the external wound and that of the vein. Experience, however, has shewn that, whether the vein be exposed or not, phlebitis may supervene. The ancients were accustomed to make an incision through the whole of an agglomeration of veins; and it is said that accidents were unfrequent.

A plan in common use at the Middlesex Hospital, is to apply upon the course of a varicose vein a composition of caustic potash and soft soap. It is left until a large slough is formed, and if the vessel be superficial, that may be included in the destruction, if not, adhesive inflammation may be developed in it, and its cavity be obliterated. This mode, however, is not exempt from the danger of suppurative phlebitis.

Some years ago, Davat proposed that veins should be obliterated by passing needles under them, and twisting threads tightly under the needles. The operation has been variously modified by Velpeau and others, and is, in my opinion, a successful operation. It has been performed very frequently, and I know of only two accidents, and they happened in persons whose general health was bad. The mode in which I perform the operation is to choose a large varicose trunk, to pass one or two needles under it: if the latter, I leave an interval of an inch or more between them. I then twist a ligature around, not tight enough to strangle the tissues and cause an ulcer, but merely tight enough to prevent the blood from circulating. At the end of six, seven, or eight days, I remove the ligature, and I am mainly guided as to the time of the needles becoming loose, by a little purulent oozing taking place around them. At first, the portion of the vein below the ligature is distended, but at the end of three, four, or five days, this is materially lessened, a coagulum is formed, and the vein feels firm. If two needles be inserted, a certain quantity of blood is included between them; and when this feels quite firm, we may safely remove the needles. Extirpation of varicose veins is rarely practised in the present day; it consisted

in circumscribing a varicose tumor between two incisions, and dissecting out the mass. This operation was often long and painful, and subject to the same accidents as section by other methods.

MUSCULAR AND TENDINOUS SYSTEMS.

Muscular.

Wounds.—When a muscle is cut through, the two ends are removed as much farther from each other as the person is energetic and the muscular fibres longer. It is increased still further if the position given to the part be one of extension. In treating these wounds, therefore, care must be taken to place the part in the most advantageous position, and to avoid all which can irritate it. Muscular tissue is not reproduced, coagulable lymph is deposited between the cut surfaces, it is organized, connects the extremities, and is gradually transformed into a fibro-cellular tissue, not unlike the tendinous intersections which exist on the rectus abdominis muscle.

Contusions of muscles offer this peculiarity, that they may not only give pain, but may produce paralysis; and this is especially marked in the deltoid and glutei muscles, where it is often extremely obstinate, and sometimes exists in defiance of all the means which are employed.

Rupture.—Well-authenticated examples of this accident are not to be found before the middle of the last century. Many persons still cling to the opinion that it is the tendinous, and not the muscular fibres which give way; but the cases described by Sedillot are too many and too exact to allow us to doubt that the muscular and not the tendinous fibres were implicated. These injuries are owing to a sudden and unexpected effort, in which a muscle is placed in forced contraction, whilst the rest of the organ is in a state of relaxation. Of the twenty-eight cases referred to, the seat of injury is indicated in twenty-one: thirteen times it occurred at the point of insertion of the muscular fibres into the tendon, eight times it happened in the body of the muscle. The muscles most exposed to rupture are those of the calf of the leg, the rectus femoris, the rectus abdominis, psoas, and deltoid.

The sudden and involuntary contraction which causes rupture, is usually interrupted by an acute pain or shock, which indicates the moment of rupture. If the patient be left to himself, this pain may continue, with more or less severity, for some time. Often a noise has been heard at the moment, like the cracking of a whip; when much of the fibres of a muscle have given way, a depression exists at the point, frequently this depression disappears soon, the effusion of blood and

tumefaction filling it up. Left to itself, it may be many weeks or months before it is cured, and when accomplished, it is by the means described when speaking of wounds of muscles. Usually these injuries have not serious consequences, but Sedillot and Bover mention the case of a young man, who, in lifting a load, ruptured the psoas muscle: the accident was followed by inflammation, abscess, and death.

The proper mode of treating these accidents is by position, rest, and bandaging. The position must be such as to relax, to the greatest possible extent, the injured muscle, and it should be retained in this position for ten days or a fortnight. A bandage should, if practicable, be applied, so as to support, equably and firmly, the part. Compression favours the relaxation of the muscle, keeps the edges more in contact, is opposed to new contractions, and facilitates the absorption of the effused fluids. With a bandage well applied, in the case of rupture of the extensor muscles of the foot, the patient may at once move about. If there be much inflammatory action, local or general bleeding and cold applications may be necessary.

A muscle may, it is said, be *luxated*—that is, it may escape from its fibrous sheath. Pouteau believed it frequently happened (*Mélanges de Chir.* p. 405), but certainly the single case he mentions is not calculated to carry with it much conviction on the subject. Portal mentions those cases which he had observed in the dissecting-room. A certain number have been observed in the dissecting-rooms of London, principally affecting the long head of the biceps. Whether these cases were produced by the violence of dissecting-room porters, or whether they existed during life, is doubtful. If, by the accident, the aponeurotic sheath were opened, no doubt a muscle might escape; but whether under any other circumstance, may fairly admit of doubt.

Retraction.—When we examine a retracted muscle, the fibres have become white, and almost reduced to a condition of aponeurosis. Sometimes there is no great diminution of bulk, at others it is considerable: sometimes the shortening is equal to a fourth, a third, or even half the length of the muscle. The consequences of this condition are flexion of the part, and often a vicious conformation of the parts to which it is attached. This deformity will be much greater if the condition has existed from infancy; but this we will particularly consider when speaking of wry neck and club foot.

Tendons.

Wounds of tendons may happen in various ways—either in the progress of a sur-

gical operation or by accident. If the tendon be protected from the action of the air, one of two things happens: if the parts be nearly or completely in contact, the part may heal by first intention; if removed to a certain distance, a plastic lymph is developed, connects the extremities, and ultimately acquires all the characters of tendon. If the interval be considerable, the tendon will be lengthened by so much, and great inconvenience may be the consequence, because the muscle to which it belongs becomes, as it were, paralyzed and useless. If the extremities of the tendon be in contact with air, they become pale; but at last, after a kind of exfoliation, the surface becomes vascular, red, and covered with granulations, by which union is ultimately accomplished. In these cases, the means by which we can bring the parts into more direct contact are to be preferred: the suture would appear to accomplish best this indication, but it necessarily irritates, so that if it can possibly be done without, it should be dispensed with. Velpeau speaks of a case where there was a space of four fingers' breadth in the rectus tendon, without sensible inconvenience in extending the limb: where great precision in motion is necessary, under similar circumstances, inconvenience would be felt. It is, therefore, difficult to recommend or reject absolutely the use of the suture, but I agree with Mondiere, who says it is sometimes useful, rarely indispensable, and very frequently useless or injurious. If we determine to use it, we must select very sharp needles; because tendinous structures are very resistant. The position must necessarily vary with the kind of tendon divided: if extensors be divided, we completely extend the limb, if flexors, we moderately flex it, if there be a wound of the integument, we endeavour to heal it. In most cases, careful bandaging above and below the wound will be found useful, and for fourteen or fifteen days the part should be kept entirely at rest. If the wound of the tendon be jagged, it should be made regular, if the tendon be small, one suture will suffice, if broad more will be required. The ligatures must usually be cut away when their presence is no longer necessary, for we shall wait a long time for them to cut their way out.

The tendons in the neighbourhood of the elbow-joint are sometimes wounded; the triceps behind, the biceps in front. The division of the tendon of the biceps interferes less than might be expected with the motion of the forearm. Gangrene and deep ulceration have destroyed part or even the whole of this tendon, and yet the power of flexion has been gradually restored. Haller, Dionis, and others, relate

cases of rupture, or section of it, where the movements of the forearm were scarcely at all interfered with. In 1836, Velpeau saw a printer who had a large contused wound near the bend of the arm: there was division of the skin, of the aponeurosis, of the whole of the biceps tendon, and even part of the brachialis anticus. Velpeau said, if amputation could be avoided, flexion of the forearm must be lost; and yet the movements of the forearm were almost completely restored. After the division of the biceps, the brachialis anticus, to a certain extent, performs its functions. Still no efforts should be wanting to heal these wounds; and if the separation be great, and position be insufficient to bring the ends together, the suture may be necessary. In Severinus (*Med. Effie. de Bonet*, p. 593) is a unique case of wound of the biceps, but it is very vaguely described: if we consider the cases of fracture of the olecranon, we shall come to the conclusion that it may not occasion very serious derangement in the motion of the forearm.

The only wounds of tendons of the foot which we shall particularly consider are those implicating the tendo-Achillis. Incomplete division of this tendon may occasion serious accidents. A scythe incompletely divided this tendon; great pain, severe fever, and delirium followed, and these symptoms were promptly subdued by completing the division. (Molinelli). Bazzieu mentions a case where the section was almost complete; the pain was acute, the tension very great; both were dissipated by cutting the remaining fibres. Clement details a case, where three-fourths of the tendon were cut through; inflammation, gangrene, and hydrophobic symptoms were developed, but speedily ceased when the tendon gave way. These facts are, however, insufficient to justify us in recommending the system pursued by the ancients. No matter how slightly the tendo-Achillis was wounded, their rule was to complete the section. Besides, a large number of cases of incomplete division are related where no such accidents occurred. Abandoned to themselves these wounds would heal, but the tendon would be lengthened. As, however, the functions of this tendon are of first-rate importance, we must always endeavour to procure apposition, so that no serious lengthening may occur. This may be procured nearly as well without suture as with. The following attitude, in which the leg is to a certain point flexed, and the foot extended, will very well and very easily accomplish the object, unless there be actual loss of substance. The older surgeons were accustomed to maintain a limb in this very uncomfortable position for several months.



Towards the end of the second or third week we may begin to move the limb: at first the motion should be very limited, but extension of the tendon is to be gradually made.

I know no case where, by accident, the biceps femoris has been divided, but there are cases on record where the tendons, forming the inner ham-strings, have given way, and where suture and position have restored, to a certain extent, their functions. Boucher mentions a gun-shot wound, which implicated both orders of flexors of the leg, and yet the power of flexion was fairly restored. Paré describes a case mentioned to him by a barber-surgeon. "There was total incision of two tendons which flex the leg; by means of suture the ends were brought together and perfectly consolidated." In a situation like this one would think the ends might be brought together without suture. The best position in such a case would be that in which the leg is flexed, and the thigh extended.

Rupture.—Tendons are more frequently ruptured than muscles; but this is a matter open to discussion, because the point injured is usually that in which it is difficult to say, really, which has suffered—the point of apparent junction in fact. It is commonly a consequence of violent muscular contraction, such as is produced in the act of jumping: such are the ordinary causes of rupture of the tendo-Achillis. Sometimes it may happen without violent contraction; a false step, or missing a step in coming down stairs. In these cases the organs are, as it were, taken by surprise; and a more moderate effort is then sufficient for the purpose. The rupture of certain tendons is accompanied by a noise which the person himself hears; a sensation of percussion or pinching is felt, as if a stone were thrown, or the part were cut by a whip. The pain usually soon abates, but a numbness continues longer. The importance of these injuries is proportioned to the importance of the injured tendon; the rupture of the tendo-Achillis, that of the rectus femoris, the triceps brachialis, are the most serious.

The treatment of ruptured tendons is the same as that of wounds; and, therefore, I need not further allude to it.

CLUB-FOOT.

Club-foot, though it expresses no particular condition of that organ, is well known

as a term applied to deformities of the foot, which are often of frequent occurrence. Those deformities have four great varieties, which are distinguished by the terms *varus*, *valgus*, *talus*, and *pes equinus*: *varus* is a forced adduction; *valgus*, a forced abduction; *talus*, forced flexion of the foot upon the leg; and *pes equinus*, an extension carried to the highest degree.

In the case of *pes equinus*, the gastrocnemii, soleus, and the flexors of the toes, are retracted; in *varus*, the tibialis anticus; in *valgus*, the peronei; in *talus*, there is retraction of the tibialis anticus and the extensors of the toes, with paralysis and atrophy of the gastrocnemii and soleus. These are primary forms of club-foot, but one variety may often partake of others, so that the pure and simple form of either variety is not often seen. Simple *varus* is so rare, that, in 400 cases of club-foot, Guérin only saw it seven times. Simple *valgus* is still more rare; and *talus* is very rarely seen at all.

In a considerable number of cases, club-foot is a congenital disease; and, being produced under circumstances in which it is impossible to observe its progress, the mode in which it is brought about has been the subject of much discussion: some persons thinking that there must be a pre-existing vice in the germ; others, that there must be a mechanical cause, to which the limb is subjected in utero; others referring it to some accidental disease in the fœtus; others to arrested development; and others to irregular muscular action.

Whether a vice can exist in the germ I do not pretend to say; certain it is, there are many examples in which the disease seems to have been hereditary. Brückner mentions the case of a man who had two club feet: three children were born to him with the same infirmity, a fourth was born with straight feet; he immediately suspected his wife of infidelity, and discovered it.

From the time of Hippocrates to the present, it has been maintained, that the pressure of the uterus might cause this deformity. We know that external pressure, long continued, may change the relation of articular surfaces, but it is extremely difficult to bring proofs that this is really a cause of club foot; and the presence of the amniotic fluid has been urged as an objection against it. Martin maintains, that in most cases of club-foot the quantity of that fluid is small—insufficient to prevent the pressure of the uterus; and he brings forward cases as evidence of this fact, where the direction of all the limbs affords a strong presumption in favour of this opinion.

Joerg is among the first who attributed club-foot to the excess of action of certain

muscles, which may depend upon some lesion of the nervous system. Delpech believes those muscles to have been primarily short. Jalade-Lafond believed that convulsions, to which the infant may be subject during uterine life, might cause it. Rudolphi believes these deformities to be dependent upon a morbid influence of the nerves upon the muscles.

Whether deranged muscular action be the exciting cause of these deformities is a matter almost, if not altogether, incapable of proof; but there can be no doubt that when displacements exist the muscles accommodate themselves to new circumstances, and then may oppose themselves to reduction. Although, therefore, I must not be understood as coinciding in the opinion, that each particular deformity is produced by the retraction of particular muscles, I admit that it is necessary to overcome the resistance of certain muscles in the cure of the disease—the tendo-Achillis, to let down the heel; the tibialis anticus, to allow of the sole being turned to the ground; the tibialis posticus, which turns inwards the fore part of the foot; the peronæi in certain outward deformities. How this resistance is to be overcome we shall presently consider. The theory of arrested development seems to me to depend upon this question: in the healthy condition is there any period of uterine life when the infant has always club-foot? if not, arrested development does not explain it.

Club-foot may be developed during the existence of convulsions in infancy, and the period of dentition; it may happen as a consequence of burns, of abscesses, and of various other injuries and diseases.

The disease appears to have a greater predilection for boys than girls, and this circumstance has been taken advantage of by Martin: he says boys are larger, and more exposed to be compressed by the uterus. Of 198 cases, 84 were double, and 116 occurred in boys.

Whether congenital or acquired, in appearance the deformity is very similar: there is emaciation of the leg, and more especially of the calf; still it often retains its natural form; sometimes the tibia is curved, and the internal ankle no longer projects. As the muscles are short and thinned, their tendons seem elongated; the skin of the points of the feet which touch the ground is callous, and occasionally a bursa is developed in the cellular tissue as a protection. It is hardly necessary to insist on the great inconvenience which a patient with these deformities suffers.

Treatment.—It has been asked, are these diseases ever cured without the intervention of art? Many cases are on record, where the necessity of carrying heavy burdens has

obliged the patient to rest firmly on the sole of the foot, and he has ultimately got rid of his infirmity. Richter mentions the case of a young man with club feet who became a tailor; the habit of resting the thighs upon the feet, in sitting cross-legged, ultimately relieved him of his infirmity. But cures by such simple means are rare, and they require a great deal of time.

There is one means which has been largely employed by Dieffenbach and Guerin, and which is in many respects less objectionable than ordinary machines—I allude to plaster of Paris. The limb to be acted on is smeared with grease, and surrounded by a flannel bandage: it is then placed in a wooden gutter, and secured there in a proper position; semifluid plaster is then poured around the limb, which is maintained in its position until the plaster is nearly hard. When quite solid, the gutter is removed, and the cast is scraped down, until its thickness does not exceed a quarter or a third of an inch.

No class of diseases has more severely taxed the mechanical ingenuity of medical men than that we are considering. In many cases, especially in young children, the hand of the surgeon is alone sufficient to restore to the foot its proper characters; but then when the hand is removed the deformity returns, and therefore, apparatuses of various kinds have been invented to maintain the foot in the position which has been given to it; these machines are varied with the particular deformity. Scarpa, Boyer, and others, have invented machines which have been in general use. By using such means, neglecting nothing which may relax the tissues, and strengthening those which are feeble, we may often in recent cases overcome the resistance of the retracted muscles, the ligaments, and even the plantar fasciæ, re-establish the bones in their proper position, and restore to the limb its vigour and its form. The promptitude of these results in the new-born infant, shows the necessity of early treatment, although in after years such results are sometimes obtained. Still, however well directed these means may be, they will often fail, and the fatigue and discomfort are always great; in consequence of these circumstances, another mode of treating these deformities is almost exclusively used in the present day.

Among the muscles which require elongation, in the treatment of club-foot, the extensors unquestionably hold the first place; their extension almost serves to cure pes equinus, and remedies the retraction of the heel, which constitutes the most formidable obstacle to the cure of varus; their tendon frequently forms an inflexible cord, when we attempt to reduce the foot in these two varieties, and if in the dead

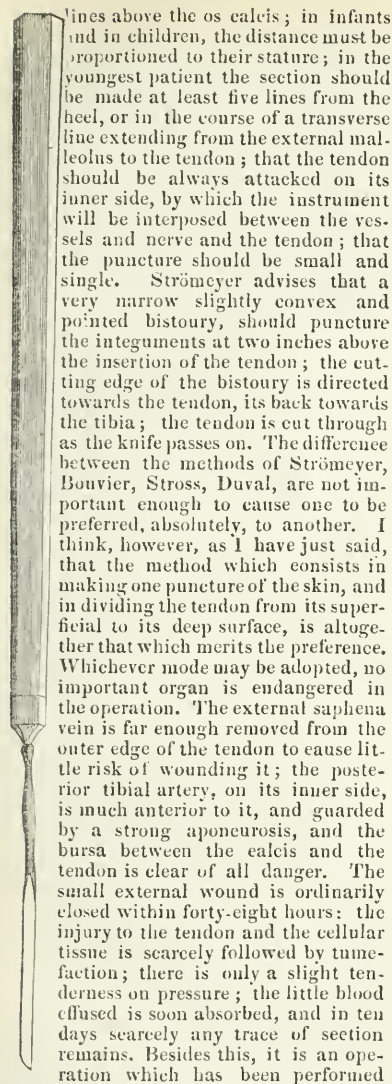
body it be divided, the main resistance ceases.

The section of the tendo-achillis is therefore an important element in the cure of these diseases; but it is not easy to say when it was first performed. In Limousin, and probably elsewhere, in the practice of the veterinary art, operations of this kind have been long performed: but for the cure of club-foot in the human subject, Thilenius, a surgeon residing at or near Frankfort, as far as I know was the first to describe it, (*Medic. und Chir. Bemerkungen*, 1789). His patient was a young woman of 17, who had suffered from her earliest infancy; she walked on the dorsum of the foot. On the 26th of March, 1784, the tendo achillis, *with the integument over it, was cut through*; the operator, M. Lorenz, maintained the foot in its new position; in six weeks the wound had cicatrized, and after a short time "she was able to walk like other people." Michaelis, of Marbourg, is the author of a memoir on the *partial section of tendons*, contained in the *Journal of Hufeland*, Nov. 1811: this operation he had practised in the course of 1809-10, in three cases of *pes equinus*, and one of *varus*: in the latter case, he cut the tendon of the *tibialis anticus*: the patients with *pes equinus* were from sixteen to eighteen years old. Sartorius, of the Duchy of Nassau, published in 1812, a case in which, in 1806, he cut the tendo-achillis in a boy of thirteen, who, in consequence of abscess of the back of the leg in his seventh year, had the tendon so contracted as to oblige him to walk on the dorsum of the foot: all means of extension failing, Sartorius, with a convex bistoury, made along the middle of the tendon an incision four inches long, opened its sheath, introduced the point of a bistoury under it, cut through it, when it retracted to the extent of an inch; he freed the tendon from the old cicatrizes of the abscess, forcibly drew the toes forward, which was accompanied by great pain and by a loud cracking, as all the toes were fractured: the patient was cured, but with tibio-tarsal ankylosis. So far, no attempt was made to lessen the wound of the integuments. Delpech, on the 9th of May, 1816, first endeavoured to leave the skin over this tendon intact. Spite of these successes, many years passed without recurrence to the operation: it was Strömeyer who next resorted to it, and with success; in the 39th vol. of *Rust's Magazine* are published the particulars of six cases in which he had modified the operation of Delpech. Instead of making a longitudinal wound along the tendons, he passed a very narrow bistoury through the integument, and under the tendon, which he cut, and the little wounds were well on the third day: instead of waiting

to make extension until the twenty-eighth day, he did it on the tenth in adults, in the fifth in children. Of those operations, the first was done Feb. 28, 1831, the last on the 11th of March, 1834; the youngest patient was seven, the oldest thirty-two; the disease was congenital in two, acquired in four: machines had been employed without success. In one case, the section of the tendo-achillis was preceded by that of the flexor of the great toe; in another case it was followed by section of the extensor tendon of the small toe: two were cured in a month, one in five weeks, one in six weeks, one in two months, one failed. How many cases he has since performed, I cannot tell: it would be well if he would publish the results of his extensive practice in this department of surgery: in 1838, I believe his sections of the tendo-achillis amounted to 60. In 1835, the operation was performed by Duval, in France, and immediately after by Bouvier, Guerin, and a multitude of others. In 1836, and again in 1837, the operation was performed in England by Mr. Whipple; Dr. Little followed him, and since that time it has been performed by most of our hospital surgeons. In 1836, Dieffenbach abandoned his system of treating club-foot by plaster of Paris; and in 1838, he had performed the section nearly two hundred times, and both himself and Duval had each performed the section of different tendons to the amount of 200 times.

The operation is extremely simple: the patient is placed upon his belly, the foot is flexed so as to make the tendon tense, when a narrow bistoury is passed on its flat through the integument, under its narrowest and most projecting part; when fairly under, the edge is turned towards the tendon, a sawing motion is impressed upon the instrument, and the tendon is cut through. Or, the patient being placed as before, a small puncture is made with the point of a lancet in the integument: through this puncture an instrument like the last, except that it has a blunt point, is passed, and the tendon cut as before. Or, with a sharp-pointed bistoury we puncture the integument, causing the instrument to glide on its flat between the tendon and the integument which covers it, and when the knife has fairly reached the opposite side of the tendon, its cutting edge is turned towards it, which by the same sawing motion is cut through, from its cutaneous to its deep surface; taking care that the point of the instrument does not press through the integument on the other side. Or, the same operation may be done with a blunt-pointed knife a line wide, such as the following.

Scoutetten's directions are, that the tendon should be divided in the adult, fifteen



lines above the os calcis; in infants and in children, the distance must be proportioned to their stature; in the youngest patient the section should be made at least five lines from the heel, or in the course of a transverse line extending from the external malleolus to the tendon; that the tendon should be always attacked on its inner side, by which the instrument will be interposed between the vessels and nerve and the tendon; that the puncture should be small and single. Strömeyer advises that a very narrow slightly convex and pointed bistoury, should puncture the integuments at two inches above the insertion of the tendon; the cutting edge of the bistoury is directed towards the tendon, its back towards the tibia; the tendon is cut through as the knife passes on. The difference between the methods of Strömeyer, Bouvier, Stross, Duval, are not important enough to cause one to be preferred, absolutely, to another. I think, however, as I have just said, that the method which consists in making one puncture of the skin, and in dividing the tendon from its superficial to its deep surface, is altogether that which merits the preference. Whichever mode may be adopted, no important organ is endangered in the operation. The external saphena vein is far enough removed from the outer edge of the tendon to cause little risk of wounding it; the posterior tibial artery, on its inner side, is much anterior to it, and guarded by a strong aponeurosis, and the bursa between the calcis and the tendon is clear of all danger. The small external wound is ordinarily closed within forty-eight hours: the injury to the tendon and the cellular tissue is scarcely followed by tumefaction; there is only a slight tenderness on pressure; the little blood effused is soon absorbed, and in ten days scarcely any trace of section remains. Besides this, it is an operation which has been performed

nearly or quite six hundred times, and it does not appear that it has destroyed the life of a single person: the only accidents recorded, and they are few, have been violent pain, abundant suppuration, and gangrenous eschars from improper pressure.

Delpsch, as well as several other operators, have thought it unwise to make extension until the two ends of the tendon are fairly united together by means of the newly secreted matter. This delay was thought necessary to ensure the union, as it

was feared that if extension were at once made, and the extremities kept far asunder, union might not take place: but the cases of Molinelli and that of Clement, where there was a space of two inches between the tendons, shew that this apprehension is groundless. Experiments on brute animals fully confirm this view of the case: and a case which occurred to Strömeyer shews the danger of allowing too much time to elapse before extension is made; the bond of union having become too unyielding to allow of stretching. We should not, however, like Sartorius, make violent extension at once, because of the pain and the chances of serious inflammatory action. I do not advocate excessive extension, because I know the interval between the two extremities of the tendon may be so great as to prevent the development of an available bond of union: but if on the one hand there be a limit to the reparatory powers of nature, and if on the other hand we should avoid the irritation of forced extension, there is a midway course to be followed; extension may be gradually made after forty-eight hours without any inconvenience.

As to the manner in which extension should be made, two things are to be borne in mind: the point of section should not be pressed upon, and there should be a means of very gradually extending. In *pes equinus*, the apparatus should not only flex the foot, but it should direct it inwards, to prevent the outward inclination which results from direct flexion; the foot should be flexed so as to exceed a right angle with the leg: for this purpose a few days are usually sufficient, unless there be resistance in the ligaments or the bones. In *varus*, the articulations of the two ranges of tarsal bones do not offer less resistance after than before the section of the tendon, so that longer employment of machines becomes indispensable to complete the cure.

LECTURES

ON THE

ALTERATIONS OF THE BLOOD.

By M. ANDRAL.

Disorders produced by Anemia in the functions of Nutrition.

Digestion.—The process of chymification in a healthy man is arrested by a blood-letting. Digestion is deranged in those affected with anemia; they are subject to nausea, vomiting, dyspepsia, &c. Exhala-

tious of gas are frequently met with in this affection, as well as in hysteria.

Circulation.—Syncope; palpitations of the heart, with acceleration of the strokes of the pulse; action of the heart irregular, tumultuous. *Bruit de diable* in the carotids is one of the best distinguishing characters of anemia, or chlorosis. This sound is not found in the heart. If the bellows sound exists in the heart, at the same time that it is heard in the carotids, it does not furnish us with a pathognomonic symptom of chlorosis, as, in this instance, it depends upon disease of the heart.

The capillary vessels are subject to passive congestions. In animals, destroyed by anemia, we find the conjunctiva of a bright red colour. Amaurosis, following anemia, is accompanied with injection of the conjunctiva, hæmorrhages of the capillary vessels, epistaxis. These hæmorrhages cannot be combated by antiphlogistic remedies.

Respiration.—Panting, dyspnœa. Auscultation sometimes gives us no results; at other times we discover pulmonary congestions, or œdema of the lungs, which are attended with a crepitus. Sanguineous congestions are produced in animals by anemia, or the loss of blood.

Secretions.—Urine pale, transparent, very watery.

Saliva.—The mouth often presents a dryness which might lead us to attribute it to an irritation of the stomach; but such is not the case.

Perspiration.—By bleeding a man, we make him perspire: in persons suffering from anemia, sweating is brought on by very slight causes. The exhalations from the serous surfaces are frequently increased, and dropsies are the consequence. Anasarca is often produced in children after losses of blood, or chronic diseases. During a famine, which prevailed in France, dropsy appeared in an epidemic form. Whenever the blood becomes impoverished, serous effusions show themselves; the blood being deteriorated, and the solids not receiving blood capable of repairing their losses, we should expect to find all the tissues of the body atrophied: but we do not find this to take place, except in the muscular system, whose nutrition is impaired, while that of the brain, liver, skin, &c. do not seem to suffer. The transparent cornea gives way in animals who have suffered great loss of blood. Anemia is favourable to the development of tubercles.

Anemia is chronic or acute. When spontaneous it is generally chronic; beginning with derangement of some of the functions either of digestion or the nervous system, with intermissions; the patient being one day better, another worse. Acute anemia

resembles a disease in progress. [Case: A. B. had headache; palpitations of heart; debility; chlorotic tint; vertigo; pulse 120; frequent faintings; appearance of fever towards night; with symptoms resembling a cerebral affection, for which this case was mistaken, and treated by blood-letting, during which syncope came on. When he was put upon large doses of iron, he was speedily cured.]

Anemia may end in health or death. Simple anemia may be fatal from the impoverishment of the blood, and death may take place during the debilitated state, attended by symptoms of nervous disorder, or pulmonary congestion.

2. Alterations of the Blood as to quality.

Alterations in its chemical or physical constitution may exist, which are inappreciable to all our means of research.

Some of the alterations of its physical qualities may be detected by the sight, &c. without the aid of instruments; others are only discoverable through the aid of the microscope.

First Section.—Physical alterations appreciable to our Senses.

Colour.—Its dark colour may become lighter, on account of its deficiency of colouring matter, as is seen in lymphatic and chlorotic persons. Venous blood may assume a redder tint, and be mistaken for arterial. After blood-letting, or large loss of blood, the last that flows is of a brighter hue. In different periods of disease this florid blood is seen, and it has been attributed to the arterial blood passing rapidly through the parenchyma, without undergoing any changes, or divesting itself of its principles for the purposes of nutrition, which latter function is found to be considerably impaired. Stevens attributes the changes in the blood to the different proportions in which the neutral salts, which it contains, may exist; Rossi, to the influence of electricity.

Influence of the section of the Nerves on the coloration of the Blood.—Several theories.

The venous blood may assume a darker hue, and become as black as ink. The venous blood has undergone this change by the introduction of a poison, such as the miasmata of typhus, &c. In some epidemics, according to Stevens, the blood presented that dark or black colour in persons in whom the epidemic disease had not as yet shown any of its symptoms; and, according to the same author, this blood, on exposure to the air, did not become red. In the cholera the blood was black; in scorbutic patients, the blood is found of a darker hue. The blood may become yellow, and

more especially its serum, without its containing any bile; animals stung by scorpions exhibit this appearance. If the blood becomes green by the addition of nitric acid, bile is present. The blood has sometimes presented a white or milky colour, or merely contained streaks of white, which were supposed to be derived from the presence of chyle or milk; but this whitish colour is produced by a greasy matter, described by Chevreul.

The buffy coat differs in colour from the crassamentum. It varies in thickness from one to nine lines, and is modified by the vessel which receives it. When thin it may be florid or greenish; when thick, white or yellowish. Its consistence does not depend upon its thickness. When soft on its surface, it frequently contains mucus; when well formed, the crassamentum on which it rests is very soft: may be partial or general, or cellular; as large as the crassamentum, or greater or less in size. Its shape may be flat, like the crassamentum, or it may be hollowed in the centre, and raised at the edges (cupped); may be perfect or imperfect. The appearance of the buffy coat, when perfect, is of importance; but, when imperfect, much value should not be attached to it, as it is met with in many dissimilar diseases. The buffy coat is composed of the fibrine, sometimes containing in its meshes serum and albumen; and on its surface is sometimes found a softish substance, which appears to be altered albumen.

The buffy coat, in its formation, is influenced by certain physical causes. Blood drawn from a vein will present a buffy coat; while the same, drawn, by cupping, from the capillary vessels, will not present a trace of it. According to the different forms of the vessels into which it is received it will be present or wanting; that drawn from a small orifice will not present it, and, if allowed to trickle down the arm, the same results will happen; though this rule does not hold good in all cases. If the bleeding be interrupted by a state of syncope, that which flows after the syncope will not be buffed. If the blood be well shaken it will prevent its buffing; and the same will happen if it be allowed to fall down from a height. If received into vessels which are large and flat, the buffy coat is with difficulty formed; whereas conical and narrow vessels favour greatly its formation.

Influence of diseases on the formation of the buffy coat.

If the character or disposition of the disease hinder or is unfavourable to its formation, we cannot promote it by any physical influences; and in those cases where

there is a disposition to its formation, it will make its appearance although opposed by the same influences.

The importance of the buffy coat has been admitted by some, and denied by others. Both these sects are in error. The buffy coat does not always imply the existence of an inflammatory state.

I have preserved notes of 1494 cases in which bleeding had been practised, the blood having been drawn from orifices of the ordinary size, and been received into vessels of the same size and shape. The following are the results:—

Perfect buffy coat...	in 613 of these cases.
Imperfect do.....	„ 183 „ „
No appearance of do. „	668 „ „

The buffy coat may be absent in all the different varieties of diseases. In its perfect form it is most frequently met with in the following cases:—

Acute articular rheum.	in 4-5ths of cases.
„ pneumonia.....	„ „ „
„ pleurisy	„ „ „
Pulmonary tubercles ..	„ „ „
Acute metro-peritonitis	„ „ „

In the first stage of pulmonary tuberculation the blood does not present this coat, but, as the stages of this disease are more advanced, it becomes more frequent; and, when caverns have been formed, the buffy coat is as often met with as in pneumonia, but its thickness is less. Next in order to these diseases comes erysipelas of the face, in which the buffy coat is found perfect in 3 5ths of the cases; imperfect in 1-5th; and absent in 1-5th. In angina and amygdalitis, it is found perfect in one-half of the cases only. Taking peritonitis and nephritis together, it is as constant in them as in pneumonia. In painter's colic, it occurs in one third of the cases; and in pulmonary emphysema and ophthalmia it is found in the same proportions.

Bronchitis, even when capillary, does not exhibit it in more than 1-4th of the cases, and the same proportion answers for gastro-enteritis and chronic rheumatism. In effusions into the pleura after fever, in intermittent fevers, organic affections of the heart, and cerebral congestions, it occurs in the proportion of 1-6th of the cases. In cerebral and uterine affections in 1-7th, and in lumbago in 1-10th of the cases. In typhus fever it is met with in 1-24th of the cases. In this latter affection the imperfect one is more frequent than the perfect one, and shows itself in 1-3rd of the cases. In the cholera the buffy coat was absent when advanced to the period of cyanosis. In hysteria, scia-

tica, pleurodynia, simple jaundice, it was either imperfect or absent; and not met with in neurosis, mental alienations, chorea, delirium tremens, saturnine epilepsy, facial neuralgia, simple or mercurial erythismus, scurvy, &c.

I have not many cases of scarlatina, measles, or small-pox, in which I have employed bleeding. In scarlatina I have never seen the blood with a perfect buffy coat, but frequently with an imperfect one; in measles very seldom; and in small pox I have found the buffy coat as the general rule, and I would place it in frequency after pneumonia, but my data are not sufficiently numerous, and the appearances differ according to the stages of the disease.

In speaking of small-pox, we must consider three circumstances; first, whether there be a complication of pneumonia or of pus in the blood; second, whether the eruption be distinct or confluent (all those cases in which the buffy coat was well developed, were of a confluent character); third, period of the disease: before the appearance of the eruption I found, as in typhus fever, no buffy coat; but I must say that I have bled but in a very small number of cases. After the appearance of the eruption, from the second to the fifth day, I have found a firm and thick buffy coat similar to that of acute rheumatism. At the period when the pustules become filled with pus, and when the fever of suppuration is established, the buffy coat still shewed itself, but becoming soft, thin, and imperfect, and covered with a kind of infiltrated mucus.

The buffy coat is imperfect or absent in epistaxis, bleorrhagia, cystitis, erythema, urticaria, and venereal buboes. I have never found it perfect in any of these diseases.

In chlorosis of a pure, simple, uncomplicated character, I have bled three times. In the first case I found the blood presenting a perfect buffy coat, thick, firm, consistent, with elevated edges, and, in this case, there was no fever—the crassamentum was small, with a large proportion of serum. In the second case, the blood was imperfectly buffed, and, in the third case, was not so at all. In another case of chlorosis, complicated with acute articular rheumatism, the blood was covered with a perfect coat.

It has been asserted that the blood drawn from a horse is always buffed and cupped; but that drawn from a healthy man is not so. De Haen and Boreski did not attach any importance to this coat, and denied its value. Authors often confound the part of the blood which becomes oxygenated with the buffy coat. Thoma-

sini attaches great importance to this appearance of the blood being buffed; and says it is to be met with in a circumscribed phlegmasia, or one of a general character, or in a phlogistic diathesis, such as is presented by a pregnant woman. He considers chlorosis as a phlogosis of the blood-vessels.

The blood may be buffed in all diseases; its value depends upon the proportion in which it is found in such and such diseases, and depends more upon a certain condition of the blood than upon any particular disease. This condition of the blood may be met with in different diseases, and may thus explain its appearances in such and such cases. I merely give this explanation, without attaching much value to it.

Influence of the febrile state upon the presence or absence of the buffy coat.

Fever alone will not produce it—witness typhus; however, we generally find fever accompanying its presence; for it does not exist in acute articular rheumatism unless fever be present. Plethora alone will not produce it. The constitution has no influence over its production. Does the complex phenomenon called inflammation, possess any influence over its formation? Those diseases which present the best-marked symptoms of inflammation are also those in which it is found most perfect. Its existence alone will not reveal the nature of the disease; and its presence does not furnish a reason for bleeding; for in phthisis it is always to be met with. In acute articular rheumatism, after twenty blood-lettings, it will still be found as long as the intensity of the disease lasts, and although the crassamentum of the blood becomes less.

The mechanism of the formation of the buffy coat is wrapped in the same mystery as the cause which produces it. Its formation is prevented, or with difficulty effected, when the blood coagulates too fast. If the blood does not coagulate, it will not be produced, and it is not necessary for its formation that the same condition of the blood should always exist. It may be formed under different conditions of the blood.

Theory of its formation.—The quantity of fibrine in the blood is increased, and, if the coagulation take place slowly, the fibrine becomes completely separated, and, its specific gravity being less than that of the globules, it floats on the top, forming there the buffy coat. M. Denis describes fibrine as a modification of albumen. The buffy coat is composed of a portion of the fibrine which separates from the globules. Why

and by what means produced? We can give no answer.

Alterations of the Odour of the Blood.

Morton describes a patient whose blood was stinking. Morgagni relates cases where it presented an acid odour. Stevens detects the yellow fever by the odour of the blood. I have never been able to discover any smell in the blood of small-pox or typhus patients. Poisonous substances might communicate their odour to the blood as they are carried along with it.

Alterations of the Taste of the Blood.

In the cholera the blood becomes insipid. The ancients said that, in Rachitis, it was acid.

Heat of the Blood.

In some diseases the temperature becomes elevated in several degrees, and it remains still to be seen whether the blood partakes in this elevation of temperature. It was asserted that, in the cholera, its heat fell three or four degrees, and, in the cold stages of intermittent fever, this lowering of the temperature had been noticed. I deny this fact; for I have seen, in the cold stage, the thermometer indicating a temperature equal to and even above the natural standard of a healthy man. In hysteria, where the nervous system is so much disturbed, we might expect to find the heat of the blood decreased. Morgagni relates a case of a young hysterical woman from whom the blood drawn was cold. I am not aware of any authenticated case, in medicine, in which the temperature of the blood was increased.

Electricity of the Blood.

According to Bellingheri, in what he calls inflammatory diseases, the blood drawn from a patient is deficient in electricity; and, according as the symptoms of inflammation are on the increase, the electricity of the blood decreases, and *vice versâ*. The electricity would be negative when the blood was flowing and was buffed, and would be less than in the healthy fluid. When the electricity was in great quantity, there would be no buffy coat; its electricity would be greater at the beginning than at the close of a bleeding; but on all those subjects science is still in its infancy.

Alterations in its Consistence.

Its consistence may increase to the extent either of becoming thicker or of becoming solid. It may be diminished, becoming very liquid, not forming any clot, when drawn from the body, or when found in the dead subject.

Augmentation of its Consistence.

The doctrine of Boerhaave was based upon the thickening of the blood, which, according to him, was such as to prevent its molecules from passing through the minute capillary vessels; thus producing a congestion, depending either upon this thickened condition or upon some change in other respects. In fevers, the blood becomes thickened by the escape of the liquid or watery parts, and by the increased temperature. Hoffman considered these obstructions produced by the thickened state of the blood, as giving rise to fever, and the conversion of the blood into pus. All those opinions are merely theoretic, being unsupported by proofs, and were upset by the solidists. At present those ideas are again brought forward; and Magendie has experimented on this subject. Substances which, mixed with the blood, thicken it—such as oil, grease, &c., were introduced into the veins of animals who died with either symptoms of pulmonary affections, or death was produced slowly by other causes. On examination he found congestions and extravasations of blood—engorgements resembling pneumonia in its first or second stages. Such occurrences may be explained by supposing these foreign substances incapable of passing through the lungs, and thus producing congestions. If charcoal be injected into the veins of an animal, he recovers from its effects, as the molecules of the charcoal, reduced to an impalpable power, are smaller and mingle with the blood without thickening it. The blood may thicken spontaneously, and, by analogy, we may believe that it may become so to such degree as will prevent its passage through the vessels, and congestions thus be formed: experience, however, does not prove this. In one case, by the aid of the microscope, was seen a portion of blood thickened, endeavouring to pass through, and stopped before the capillary vessels, until propelled through them by a violent contraction of the heart produced by the agitation of the animal. I am of opinion that a great number of inflammatory congestions may be accounted for by the thickened condition of the blood rendered thus incapable of passing through the smaller vessels; this opinion may, perhaps, one day be borne out by future researches.

Boerhaave thought that some kinds of food thickened the blood; and he is supported in this theory by some facts in physiology—as such a food producing a milky chyle, and another kind furnishing one of a different character. May these different chyles produce differences in the blood? We know not. Many diseases seem to be

cured by diluting the blood by means of drinks. Some skin diseases are thus removed. Water injected into the current of the blood separates itself, passing off either by absorption or through the kidneys. Water given to a sick person passes off by excretion, it being very difficult to dilute the blood, as this fluid, by a law of its own, endeavours to repel it: the blood is naturally viscous; its viscosity increases with the augmentation of its consistency. In the cholera its viscosity was increased, and the water of the serum diminished. The greater viscosity of the blood in inflammation has been attributed to the large quantity of albumen which it contains. The serum may become viscous, or its viscosity may diminish.

Coagulation of the blood during life-time.

We find clots in the heart, if we open the body fifteen hours after death, before putrefaction has commenced. In animals, we find them one hour after death; if we delay till twenty-four hours have elapsed, our chances of finding them are lessened, as the blood liquifies when putrefaction sets in. There are some cases in which the clots found after death have been formed during life-time—can we detect their formation in the living subject? The clots differ much from each other, and are found red, white, red externally, white internally, or white externally and red internally, or striated with red and white; these streaks have been taken for vessels, which is erroneous. Their consistence may be firm or soft, dry or infiltrated, and easily torn; their size may be large, occupying all the heart, and branching into the arteries and veins. The clots formed after death may contract firm adhesions with the walls of the heart internally. In the hearts of animals examined just after death, no clots are found; but in a few hours after we find them formed and adhering to the walls: around the clot is formed a pellicle resembling a membrane, and which may easily be mistaken for a false one, although it is merely a physical phenomenon, resembling the perfect buffy coat. Some clots are formed in the heart during life-time—are their characters similar to those formed after death? We can distinguish them by certain signs—but are those signs well marked? They are not; the physical peculiarities are not sure enough. If the clots do not present characters which serve to distinguish them from those which are found in almost all the hearts which we examine after death, I cannot place reliance upon the diagnosis which pretends to ascertain their presence during life. How can the blood so agitated as it is in the heart, coagulate during life-time?

The friability of these clots, and their grey colour, have been given as proofs of their being found during life: at the summit of the valves, when they are disorganized and rough, we find polypi which appear composed of several layers and presenting a degree of organization. The best signs of their formation during life are their being organised in their centres; but this we find very rarely.

I have injected the clots found in the heart, by the coronary arteries, and their being thus injected was considered as proving the existence of vessels in them; but I do not look upon it as such a certain sign. The existence of pus in their centre was advanced as another such proof; but has it been secreted there? Before we can admit it, we must allow the organization, the inflammation, and the power of secretion of the clot, which is far from being proved; for it may be formed by the endocardium in a state of disease, or carried into the heart with the blood, and at death has become separated from it, and afterwards surrounded or inclosed by it during its coagulation. I have never found pus in a clot which I could assure myself had been secreted there: clots may form during life in those cases which present some alteration of the lining membrane, a molecule of blood attaching itself to some part of its altered surface, and there shewing a tendency to conglomerate; this disposition may be increased by a condition of too great viscosity of the blood, and they have been found when the smoothness of the lining membrane has been altered.

The alteration which we now describe under the name of dissolution of the blood formerly was called putridity. It may exist in different degrees: in the one, the clot, although distinct from the serum, is so soft as to be readily broken down, and mixes freely with the serum under a slight touch of the finger; in the other the clot is absent, and a reddish liquid is found, with grumous masses floating about in the reddened serum. We must not confound the dissolution of the blood where the solid parts of that fluid remain uncoagulated, with that condition in which the coagulable principles of the blood are absent entirely or in part, producing a clot of small dimensions floating in a large proportion of serum: in the state of dissolution the solid parts of the blood merely form grumous masses mixed and confounded with the serum.

This condition of the blood may exist in different classes of cases: in one variety the cause which produces it is evident, as when a concentrated solution of sub-carbonate of soda was injected into the veins of an animal, by Magendie: the blood was

charged into a liquid of a reddish colour, containing portions of fibrine separated into grumous parcels. Does the blood become more alkaline where this state of dissolution exists? the following facts have been given as proofs. In blood of a scorbutic patient which was not coagulated, there existed a larger proportion of soda than natural. In a very severe case of typhus fever, Denys detected the presence of free ammonia and of an ammoniacal salt.

Bretonneau describes mercury as producing a dissolution, but this is not proved, and the same effect is caused, according to Grange, by the exhibition of resinous purgatives, cicuta, and laurel water. The sulphuric, nitric, and prussic acids, mixed with the blood in vessels, dissolve it; also some gases, as the sulphuretted hydrogen.

Influence of pus—It has been said to coagulate the blood which is found in an inflamed vein; it varies in its properties, being either acid or alkaline, sour or sweet, forming a bloody liquid or a thick one—and according to these different conditions it may produce corresponding effects: blood is not changed by the mixture of a laudable pus, but if mixed with serous pus, it is dissolved, and is prevented from coagulating. In some cases of resorption of pus, I have found the blood in a state of dissolution in the heart and bloodvessels; in other cases I have found clots in the heart, &c. Gaspard has dissolved the blood by injecting putrid matter into the veins: can this condition be produced by the introduction into the blood of imperceptible miasmata, and is it owing to their pressure that the blood in the plague and cholera is found dissolved? Do the pernicious intermittent fevers depend upon this altered condition of this fluid? The state of the blood in these latter diseases has not been ascertained.

Millman says, that in scurvy the blood is not changed; in the great majority of cases it is found dissolved. According to L'Inde, the blood is not changed in the first stage of this disease, but as it advances in its progress it becomes more and more altered until it becomes entirely changed into a reddish fluid. I am of opinion that miasmata are injurious by producing certain changes in the blood, which are not discoverable in the first days of the diseases.

Viruses.—In small-pox the blood has sometimes presented an imperfect buffy coat, and in the severe forms of it, it has been found dissolved. Is this owing to the presence of pus? The hydrophobic virus has been mentioned as producing the dissolution of it: I cannot give any opinion on this subject. Can it be produced by the food employed? I think that an in-

sufficiency of aliment, combined with bad air, may produce the scurvy: a humid atmosphere has been mentioned as a cause of the dissolution of the blood, which state, however, must be distinguished from its mere liquidity. The blood may exert influence over the nervous system, which may be differently excited by it, according to its various morbid conditions: this is a very serious question, and one very difficult to decide.

Dupuy, of the veterinary school of Alfort, has made experiments on this subject. After the section of the eighth pair of nerves, the blood has been uncoagulated: the function of hæmatose being by this section disordered, may it not account for this result? Meyer, on the other hand, did not find its coagulability impeded by this section. Authors assert that a violent commotion of the spinal marrow has produced this condition of dissolution: persons struck by lightning have presented the same appearance of dissolution. An animal tired to death has his blood in a dissolved state, purpura hæmorrhagica, a disease in which the blood has been found dissolved, may develop itself independent of any of those causes which we have as yet examined. I believe that in former times the dissolution of the blood, owing to various causes, was more common than at present, as may be seen by the description of the blood by the old authors, and the diseases which then prevailed.

Consideration of the causes which tended to produce this condition of the blood.

In the middle ages they were much more numerous, the habitations of men being more crowded together, the circulation of pure air more impeded, and the individuals more closely packed together; at the same time that the food was of a less wholesome quality, famine more frequent, the towns badly built with narrow streets never visited by the sun, the supply of water deficient, noxious, and impure in quality, &c. These sources of disease having been removed, we meet much more rarely in the present day those diseases which produce the dissolution of the blood.

The writings of the 15th, 16th, and 17th centuries, contain numbers of cases in which the blood was dissolved or coagulated very imperfectly, and many diseases characterized by this condition of the blood, such as scurvy, spontaneous gangrene, and purpura, are much rarer at present. The typhus fever which raged in Ireland some years ago, presented many of the features of those diseases which are described as belonging to the middle ages, and which are rarely met with at present, owing to the improved condition of the people:

their existence at the present day among the people of Ireland may be attributed to the events and poverty with which that unhappy people is afflicted, and which are not to be paralleled in any other part of Europe.

The state of dissolution of the blood produces symptoms resembling those of poisoning, and is very favourable to hæmorrhages: when the blood is merely in a liquid condition, dropsies but not hæmorrhages are produced: the secretions may be altered when the blood is dissolved, and tumefaction of the spleen is a very constant attendant in these cases. I do not think that the blood during life can pass into a state of putridity such as has been described by old authors.

We have so far described all those alterations of the blood which are recognisable by our senses, and we shall next describe those which are revealed to us by the microscope.

giving the proportion to the serum of 1.209. The serum resembled in appearance, coagulation by heat, acids, &c., that of the blood, but was less rich in albumen.

It was analysed in the same manner as the serum of the blood, by Le Canu's process, and gave the following results, which are compared below with Le Canu's analysis of the serum of the blood:—

	Fluid of Ascites.	Serum of Blood.
Fibrine.....	1.2092	
Albumen.....	52.0100	78. to 81.
Soluble matter consisting of saline and animal mat- ters.....	12.1.000	12.80—12.79
Water.....	934.6808	906.00—901.00
	1000.0000	996.80—994.79

NATURE OF THE FLUID IN ASCITES.

To the Editor of the Medical Gazette.

SIR,

IF the following chemico-physiological observations on the fluid drawn from the abdomen of a woman suffering from ascites, at present under my care, are thought worthy of insertion in your valuable journal, I shall feel obliged by the publication of them.

I am, sir,

Your obedient servant,

PHILIP B. AYRES,

Thame, Oxon,
April 14th, 1840.

CASE.—March 26th, 1840.—With the assistance of my friend, Mr. Lee, I performed the operation of paracentesis abdominis, drawing off about seventy ounces of a clear yellow fluid, which in a few minutes coagulated. The coagulum was at first nearly equal in bulk to the whole fluid, but rapidly decreasing in size, at the same time becoming firmer, and exuding a large proportion of yellowish serum. This unusual circumstance led me to convey the whole of the fluid to my residence, in order to subject it to chemical analysis. The coagulum was separated from the fluid, tied up in a linen cloth and washed, when it decreased to a very small bulk, and took on the usual appearance of fibrine: when dried, it weighed 38.5 gr.,

The apparent deficiency in Le Canu's analysis arises from the oily matters of the serum and some loss. I did not think it worth while to push my analysis so far as to ascertain the presence of the former in the fluid of ascites.

By comparing the relative quantities of albumen and water in the fluid of ascites, and that of the serum of blood, it will be found that the deficiency of albumen in the former is made up by water, and that the additional quantity of water almost exactly corresponds with the excess of albumen in the serum of the blood.

The proportion of fibrine in this fluid is found on comparison with Le Canu's analysis to be smaller than that of the blood; in the former it was 1.2092, whereas in the latter it amounted to, from 2.100 to 3.565.

These observations shew that, in point of fact, the fluid in this case was no other than the *liquor sanguinis* of Dr. Babington, (vide Turner's Chemistry.) in a diluted state, and as the abdominal cavity had been distended with fluid for several months, it is evident that the *liquor sanguinis*, or serum holding fibrine in solution, may exist without deposition of fibrine, during a considerable time out of the current of the circulation, while surrounded by tissues endowed with vitality; but as soon as the contact with those tissues is withdrawn, the fibrine immediately separates.

I have never before met with a case

of this kind in the course of either my practice or reading, nor does it appear that such a case is on record, as I find that Dr. Copland, than whom few men have been more extensive readers, in his *Admirable Dictionary*, states that, "The characters of the effused fluid have been remarkably overlooked. They vary extremely, but they generally have some reference to the state of vascular action in the seat of the effusion. When this has been considerable, the fluid is more or less whey-like and turbid, or it contains pieces of albuminous (fibrinous?) matter, or flocculi or fragments of filamentous lymph (fibrine)." And further on, "In some instances, and particularly in ascites or ovarian dropsy, the fluid collected after repeated tapping, often assumes diversified appearances. It has been remarked of a yellowish, greenish-yellow, or greenish colour, or brownish, or even nearly black, by Morgagni, Littre, and others. It has likewise presented puriform, viscid, gelatinous, milky or chylous characters, according to Willis, Morton, Becker, Coste, and Pochaska." And "the puriform and viscid or jelly-like effusion is probably caused by sub-acute or chronic inflammation." In his account of the varying appearances of the fluid of dropsies, we have no notice of such an occurrence as coagulation, and it is probable that had he met with it in the course of his reading, it would have appeared in his invaluable work.

Dr. Marcet, who paid particular attention to the chemical constitution of animal fluids, found that the fluid of dropsies was very variable as to the proportion of its constituents; and that these varied according to the situation of the dropsy, being least in hydrocephalus, and greatest in hydrocele; the allowance being 2.2 in 1000 in the former, but 71.5 in the latter. The proportion of saline matter was least in hydrops pericardii, but greatest in spina bifida, being 7.5 in the former, but 9.2 in the latter.

In an analysis of the fluid of ascites, by Marcet, the albumen amounted to only 22.6 in 1000; another specimen analysed by Bostock, contained 42.5; while in both these specimens the amount of saline matter was nearly the same. Berzelius states, but without giving any authority, that it has been found almost as concentrated as the common

serum of the blood, and containing seven per cent. of albumen.

The only notice I have seen of the effusion of serum holding fibrine in solution, is at page 899 of the fourth edition of "Turner's Elements of Chemistry," where he says, "The *coagulable* lymph of surgeons which is thrown out on cut surfaces, appears to be the liquor sanguinis, and this fluid is not unfrequently exhaled in dropsies when the fibrine constitutes either a gelatinous deposit, or appears as white flakes floating in the serous fluid." And Berzelius, "Traité de Chimie," vol. 7, p. 108, where the following passage occurs:—"Dans les états morbides inflammatoires, auxquels les membranes sereuses sont exposées, le liquide sécrété devient quelquefois chargé de fibrine. Celle-ci ne tarde pas à se coaguler, et forme sur la membrane séreuse une nouvelle ou fausse membrane composée de fibrine, et qui ordinairement rend adhérentes les unes aux autres les parties entre lesquelles a lieu l'épanchement que la produit."

In both these extracts, it is evident that the *liquor sanguinis* was not seen as a clear fluid holding in solution a quantity of fibrine; but the fact of the effusion of the liquor sanguinis, is founded on *ex post facto* reasoning. Because a serous fluid, holding in suspension flakes of fibrine, was found in the serous cavity, therefore the liquor sanguinis was effused. I do not object to the reasoning, but it shews that that fluid had not been observed in its pristine state as the fluid of dropsy.

This case proves, 1.—That the *liquor sanguinis* is effused in certain dropsies.

2.—That it may remain for some time in a liquid state, when out of the current of the circulation, while surrounded by parts endowed with vitality.

3.—That it coagulates in consequence of the withdrawal of the vitality communicated by the living tissues by which it was surrounded.

4.—That the fibrine is *not* held in solution or suspension by the motion in the vessels.

5.—That the *liquor sanguinis* is effused in a liquid state in serous inflammations, but owing to some unknown cause it immediately coagulates.

6.—That coagulable lymph is the liquor sanguinis, the fibrine of which agglutinates wounds by its coagulation.

TAPPING IN CONGENITAL HYDROCEPHALUS.

To the Editor of the Medical Gazette.

SIR,

THE valuable paper of Dr. Conquest on tapping the head in cases of hydrocephalus, gave me much pleasure; and I determined to avail myself of every opportunity of testing the value of such a plan. The only case in which I could venture to try it was the following, the particulars of which I beg to submit to the profession.

I was summoned to attend Mrs. C—— in her third pregnancy; labour was tedious, notwithstanding she had very strong pains. I was surprised at this, as her pelvis was exceedingly well formed, and her previous labour was easy and pretty quick. As the labour advanced, I was surprised at the size of the head, and its doughy, yielding feel, and after several hours of laborious labour, she gave birth to a well-formed, full-sized foetus, with a head nearly double the ordinary size. The child at first appeared dead, but by using the ordinary means, in a few minutes cried lustily. There was no difficulty in deciding that the largeness of the head arose from the presence of fluid. The pupils were natural, the functions of digestion, secretion of urine, respiration, were correctly performed, and it sucked freely, and except the inconvenience which it occasionally suffered from movement, owing to the enormous weight of the head, it seemed tranquil and comfortable. It was deemed advisable to leave the infant to nature for a little time: at the expiration of ten days the head had become sensibly hotter, bowels disordered, and the child had become anxious and fretful. Cold lotions and cretaceous medicines were administered to little purpose; I therefore proposed to the parents that the fluid should be drawn off, and, with their consent, I introduced a small trochar into the head, at the side of the fontanelle in the line of the coronal suture, and drew off about ten ounces of straw-coloured fluid: as the fluid escaped, the bones collapsed, the parietals overlapping each other, and the occipital the posterior edges of the parietals. Adhesive strips and a bandage were applied: the child cried very much during the operation: the head was reduced to the ordinary size. For several hours after

the operation the child was cold, skin clammy, and serious apprehensions were entertained for its life. Next day, however, it had obviously much improved, and with some little medicines in a few days seemed very much benefitted. It was obvious, however, after the first week, that the fluid was again accumulating. At the end of three weeks the head had acquired its original size, and I again tapped: the fluid this time amounted to about eight ounces. The improvement after this operation was not near so marked; the child seemed to suffer considerably for days after, and the fluid began to accumulate more early and more rapidly than on the previous occasion, and at the expiration of a fortnight was as large as when I last operated. The parents became disheartened, and refused to allow another operation. After this, the head continued to enlarge; the child suffered considerably, and it became necessary to administer opiates to get any relief at all. When about three months old, it had a most severe attack of crusta lactea, which at first it was hoped might prove beneficial, and therefore little was done to relieve it, until the itching became so tormenting that I was obliged to prescribe for it. It would be waste of time to narrate all the particulars which week after week presented themselves. The child suffered so much, that the mother was frequently obliged to have recourse to opiates, until at last the dose of this medicine (tinct. opii) had arrived at the fearful dose of a teaspoonful and a half for this infant. During the last month the child wasted to the greatest extent, refused the breast, and all other nutriment, and after some slight convulsive efforts, died 6th March, 1840, aged six months and a half.

Next day I examined the head. The measurements were

	Inches.
Circumference of the head . . .	20½
From tip of one ear to the same point of the other ear . . .	13
From meatus audit. externus to the middle of the forehead . . .	6
From the root of the nose to the occipital protuberance . . .	17

The water was now drawn off, and amounted to seventy ounces, or three pints and a half; it was clear, light straw colour, and there was only one small flake of coagulated lymph in the entire. It was not coagulated by heat. The fluid, as it escaped, left the bones of

the head standing in strange array, the process of ossification having considerably extended, so that when the fluid had entirely escaped, they overlapped very much. The fluid was contained under the dura mater, and rested almost entirely upon the cerebrum, for though there was a considerable quantity under the tentorium, by far the largest portion was above it. The brain itself, from the continual pressure, was flattened out, and spread over the interior of this great cavity, in some places not thicker than a shilling. It was impossible to make out any of the sinuses, nor the parts which are described as in them: the pressure seemed to have obliterated all these distinctive parts of the organ. The nerves could be readily distinguished, except the olfactory; the brain was about the ordinary firmness of that period; the arachnoid was injected generally, and the dura mater was pale, and washed-like.

It is not my intention to offer any observations on the case: our object at present ought, I apprehend, to be to collect facts. I would just remark that some time back I had the pleasure of meeting Dr. Conquest, when I mentioned the case. He said his experience was unfavourable to the operation in congenital hydrocephalus.

Should any other opportunities occur of testing the soundness of the remedy in my practice, it is my intention to avail myself of them, and then to contribute my mite to the profession, on this important department of pathology.—I am, sir,

Your obedient servant,
JOHN ARMSTRONG.

Gravesend, April 18, 1840.

EXTRAORDINARY CASE OF CONSTIPATION.

To the Editor of the Medical Gazette.

SIR,

I SEND you the following case:—

March 22nd, 1835, I was called to Miss Catherine T—, the daughter of a farmer, 18 years of age; she was low in stature, florid complexion, robust, and corpulent, and had hitherto enjoyed good health, with catamenia regular. She was complaining of pain in her head, back, and chest; bowels confined, and every thing she took into her stomach was rejected immediately. I found she

had, the previous week, while menstruating, exposed herself to cold, which suddenly checked that discharge. Opium, with common saline medicines, allayed the irritability of stomach, but her bowels were not acted on for two days, when she parted with a great quantity of hard feces, and was to all appearance released from every urgent symptom.

I did not see her after this for two or three weeks, when her mother called and stated that her daughter's bowels continued very obstinate; that she had given her purgatives of different kinds, none of which produced any effect, although she did not reject any of them, but everything in the form of food was thrown up in twelve or fifteen minutes, without any mixture of bile, or any change from the state in which it was given. Upon visiting her I found her thinner, but not suffering so much from constitutional derangement as I should have expected, when I was informed she had not had her bowels opened for fourteen days. I gave her some few purgative medicines, and took some blood from her, but these having no effect on the bowels, and the sickness being worse, I had recourse to enemata, which brought away immense quantities of scybala; these were continued for some time daily until they were returned unchanged. She now took a few other medicines, but the stomach became so very irritable, and the sickness so extremely distressing, they were altogether discontinued. Blisters were now applied to the epigastric region, without producing any change. She continued in this state, eating as usual—rejecting her food in about fifteen minutes; her bowels never open, and no appearance of catamenia, and could not be prevailed on to try any other means until the month of October, when I prevailed on her friends to see a physician in consultation, who considered the case so extraordinary, that he recommended her to discontinue the use of medicines altogether, and only use a stimulating embrocation to the chest and abdomen; to use injections two or three times a week, and once a fortnight apply six leeches to the anus. This plan was continued some time without doing any good, the injections generally returning in the same state as given.

Every remedy was now given up by herself and friends as useless, and from that time she has continued in the same

state, and although she has gradually lost her flesh, she still assists in the duties of the house, and seldom or ever retires to bed before the rest of the family.

I should have remarked she has occasionally, at intervals perhaps of two or three months, when more violently sick than usual, parted per anum with about a table spoonful of slimy matter smelling slightly of fæces. She is now so very much reduced that there is no difficulty in making an examination of the contents of the abdomen: the parts are flat, and the abdomen empty; she can bear the hand being heavily pressed over every part of it, except about that portion of the hypogastric region over the pylorus, where an enlargement about the size of a small walnut is very evident, and when that part is only gently touched, she describes the sensation "as if something was about to be forced from her stomach into her throat."

Not having made notes of the case from the beginning prevents me being so particular on some points as I could have wished; but taking the case on the whole—that a person shall be five years without an evacuation from the bowels, without menstrual discharge, and incapable of retaining her food more than ten or fifteen minutes, and still be able to go about the duties of a farm house,—it is so extraordinary, that I thought you would not deem it unworthy a place in your valuable journal.—I remain, sir,

Your obedient servant,

GEORGE OLIVER.

Newton-on-Trent, near Newark,
April 16, 1840.

P.S. I should be glad to supply any further information if required.

NERVES OF THE UPPER EXTREMITY.

To the Editor of the Medical Gazette.

SIR,

ONE of my students this forenoon was dissecting the superior extremity, and asked me to point out to him the nerve of Wirsberg, as it was not, he said, mentioned in his book. On looking at his book, Quain's Anatomy, it is not so much as mentioned; and, in Harrison's Dublin Dissector, the best manual with which I am acquainted, and which I recommend to all my students for their companion at the dissecting table, it is not described, but the name of the

nerve of Wirsberg is applied to the two, or sometimes three branches, which come off from the second, third, and fourth intercostal nerves, at the greatest lateral projection of the ribs, and generally lose themselves on the skin which shuts up the base of the axilla. These are more properly called the intercosto-humeral nerves.

The nerve in question is described by Sir C. Bell, in the second vol. of his Anatomy, p. 574—a book which is not in general very minute in its details, though it has many other valuable qualities. It is there called the nerve of Wirsberg. I forget who gave it the designation of the *cutaneus minor*, by which I am accustomed to demonstrate it.

In the subject looked at to-day, it arises from the lower of the three divisions of the brachial plexus—from the same root as the internal cutaneus and ulnar, internal to which last it lies. It runs down along the inner side of the basilic vein beneath the fascia, perforates it about a hand's-breadth above the elbow, and divides into two branches, one of which runs in front of the inner condyle, and the other, rather larger, behind it, and both lose themselves in the skin a little below the elbow. In some subjects I have seen its origin very small from the axillary plexus; and then it derived an additional root from some of the intercosto-humeral nerves.

When writing, at any rate, I may add a remark on a set of muscles said to have been discovered by some German, and noticed in one of the numbers of the GAZETTE last winter, under the name of *Rotatores dorsi*. I must confess that, when I read it, I disbelieved their existence, from what I knew of the structure of the dorsal spine, where rotation is impossible, on account of the form of the articulating processes of the vertebræ, and on account of the ribs being superadded. Nothing, however, is too absurd for a German periodical.

If the *multifidus spinæ* be dissected away with care, its deepest fibres will be seen arising from the lower edge of the arch of one vertebra near its spinous process, and passing obliquely down to be inserted into the root of the transverse process of the one below; but these have no more claim to be considered distinct muscles than the outer fibres of the lower fasciculi of the same muscles have, which pass over one, or

sometimes two transverse processes, before being inserted.—I am, sir,

Your obedient servant,
JAMES DOUGLAS,
Lecturer on Anatomy.

Glasgow, 17th Apr'l, 1840.

PUNCTURE OF THE BRACHIAL ARTERY.

To the Editor of the Medical Gazette.

SIR,

MR. PHILLIPS'S lecture on varicose aneurism has brought to my remembrance a case in which puncture of the brachial artery was successfully treated by compression.

The patient was bled for some affection of the chest, and the brachial artery unfortunately wounded: the hæmorrhage was profuse. A compress was immediately applied to the wound, and the arm bandaged from the hand to the shoulder. The limb was kept in a state of rest for a fortnight; no bad symptoms occurred, and, at the end of this time, the bandage and compress were removed. Pulsation was found in the artery at the point of puncture, but there was no aneurism, and no further treatment was necessary.

The patient died at the end of five weeks after the accident, from the chest affection, for which he had been bled, thus giving an opportunity not often met with of examining the state of the parts. There was a slight effusion of serum about the neighbourhood of the puncture; a cicatrix in the posterior wall of the vein; condensation of the cellular structure between the artery and vein, giving it a thickened sensation to the fingers when squeezed between them; an orifice in the anterior wall of the artery about a line in diameter, filled with a plug of lymph apparently becoming organized, and which looked like a small coagulum: the edges of the orifice were everted, as if they had been driven out by the stream of blood rushing from the artery: both the artery and vein were as pervious as in the natural state.

It would seem, from this case, that the process by which a punctured artery is healed is not always by the formation of a coagulum *external* to the artery, and the effusion of coagulating lymph between the edges of the wounds; for

though, no doubt, extravasation did take place in this case into the cellular substance, causing the thickening perceptible between the artery and vein, still this only acted immediately by allowing the formation of a plug in the arterial wound. This plug had not the appearance of coagulating lymph effused between the edges of the wound, for they were everted, but was evidently a coagulum formed by the stream of blood which had caused the eversion.

In disease of the heart I have seen coagula adhering to the internal serous coat, and becoming organized, and so, no doubt, might this plug, and thus would the obliteration of the puncture have been effected if the patient had lived long enough.

This case also shows that an operation is by no means always necessary when this accident occurs. Two other cases have come to my knowledge where the compress and bandage were successful; but the use of the bandage is necessary, rest being enjoined. The mere employment of compression at or above the wound can only be justifiable as a temporary expedient, and then it exposes the patient to great suffering, and, if persisted in with any view of cure, may lead to a fatal result. This happened in a case of puncture of the artery from bleeding, the limb becoming frightfully œdematous, and such a state of exhaustion taking place as not to allow of an operation.

In a case which came under my own care, of a scythe-wound of the posterior tibial artery, the cure had been attempted by compression at and above the wound. The wound was sloughy, and the patient so exhausted by the repeated attacks of hæmorrhage, that a few days more must have terminated his life. I tied the artery at and above the wound, and eventually the case did well.

If, then, compression be tried—and it really appears to me that, in wounds of the brachial artery from bleeding, we are bound to try it before resorting to an operation—the bandaging of the limb seems essential as diminishing the arterial, and, if properly used, as assisting the venous circulation, and thus preventing œdema.—I am sir,

Your obedient servant,
JOHN BARRETT.

Bath, 17, Westgate Buildings,
22d April, 1840.

MEDICAL GAZETTE.

Friday, May 1, 1840.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
 publicum sit, dicendi periculum non recuso."
 CICERO.

ON EXCLUSIVE SYSTEMS IN
MEDICINE.

THE medical student is often warned against those sturdy system-mongers who would confine nature within the iron walls of their narrow theories, and who, consequently, overlook or distort the most palpable facts, when they do not happen to square with their preconceived fancies: yet, often as this warning has been given, it still needs frequent repetition. An exclusive system offers, more or less, the temptation of 'physic made easy.' Almost all diseases are to be reduced to varieties of some single malady, thus saving the trouble of diagnosis; and all remedies are to be superseded by bleeding, or quinine, or *diète* and *eau gommée*, which much diminishes the difficulty of prescribing. Not many years, for example, have passed away since the antiphlogistic system reached its acmé in this country; when bleeding and mercury, separate or combined, were supposed to be exquisitely adapted for the majority of cases. Bleeding is the established remedy for inflammation, and it does not require much ingenuity in a practitioner to find acute or sub-acute inflammation, or perhaps some lighter shade than either of these, lurking under every train of symptoms. The lancet, it has been said, has destroyed more than the sword: perhaps this is an exaggeration, but certainly many practitioners, A. D. 1820, were determined to try the experiment. When we read such cases as those recorded by Dr. Marshall Hall, where patients were bled to cure the symptoms

caused by venesection, and where a woman was bled, "as if by infatuation," a few hours before she expired from exhaustion, we think of Moliere and Le Sage, and confess that the utmost extravagance of fiction is not a caricature. The variety of the antiphlogistic system, propounded by Broussais, is familiar (in name, at least) to most of our readers. An inflammation of the mucous membrane lining the stomach and bowels is supposed to be at the bottom of almost every disease; and leeches, with cold water and the lowest diet, to be the appropriate remedies. At the same time that the antiphlogistic theory was so fashionable, and the practice so destructive, the hepatic sect flourished. Those who are approaching that age, when even the unlettered layman begins to be a physician in his own case, may recollect how popular a disease hepatitis formerly was; the phrases, "Doctor, I think I have a touch of the liver-complaint," or, more simply, "of the liver," are still ringing in their ears. It was then that, to use the expression of Dr. Abercrombie, patients were subjected to "long and ruinous courses of mercury" for imaginary disease of the liver. Yet then, as now, diseases of the liver were far from being very common; but, alas! we are obliged to look at Nature through the spectacles of books, and the glasses are too often tinted *!

* "On surveying the returns of affections of the liver, we have certainly been impressed with the scantiness of their contributions to the general mortality of most of the districts where their influence has been traced; and it will occur to the reader either that such affections figure much too highly, in the opinion and language of certain medical men in this country, or that they are the most curable of human maladies. These returns, however, disprove the latter branch of the alternative; for we find the proportion of deaths to the number treated by no means insignificant. The fact appears to be, that, throughout the western hemisphere, diseases of the liver are very rare in comparison of those of the lungs, and of the stomach and bowels; and though, in some localities, they are more frequent than diseases of the brain, they contribute much less than these do to the amount of mortality."—*Br. and For. Med. Rev.* Jan. 1840, in a review of Major Tulloch's Statistical Report, &c. of the sickness of the British Troops.

It is hardly necessary to mention other species of this professional amaurosis, where a writer can see little more than one sort of disease; but *that* one he sees in clouds, and "hears it in the wind." Addison, in one of his papers on false wit, tells us of certain scribblers called the *lipogrammatists*, or letter-droppers, who would compose a poem, throughout the whole of which some one letter was studiously omitted*. The authors of false medicine, however, go much farther than this, and, instead of being satisfied with excluding one letter, must needs exclude all but one. An amusing essay, by one of these zealous exclusionists, is now lying before us†.

Dr. Dickson's glasses are far, indeed, from achromatic; they give a singular tinge to every object around him; and he can see nothing but intermittent fever. He is able to see that what he strangely calls "the spasmodic notions of Hoffman and Cullen—the putrid doctrines of Pringle," are no longer in vogue; but he cannot see that his own notions will never get into it; that his own doctrines will never be ripe enough to be putrid! If, however, the theories of these great physicians no longer reign in the schools, the practice which they founded on them still influences ours; and the meanest village leech practises very differently from what he would have done had Pringle and Cullen never lived. Few now read Boerhaave or Hoffman: many do not even read Sydenham (more shame for them!) but the practice of these great masters is as universally diffused as the gentle gale of the spring, though they who breathe it do not know whence it comes!

Intermission, says the subvertor of the received practice of physic, is the charac-

teristic both of health and disease. Life, say Shakspeare and Dr. Dickson, is a fitful fever. Sleep and watchfulness, hunger and satiety, succeed each other at regular intervals. We might add, that the pulse does not beat with the same frequency in the morning and evening; and physiologists tell us that we are taller when we rise than when we go to bed. "His lungs now inspire air—now expel it; his heart successively dilates and contracts; his blood brightens in one set of vessels only again to darken in another."—(*Dickson*, p. 3.)

In disease this transmission is equally marked; the symptoms never remain at the same height for a continuance, but alternately swell and sink; and, therefore, says the subvertor, all diseases are essentially agues, and require the same treatment.

When a disease, though not called ague, is distinctly periodical, it confessedly should be treated like an ague; "Why, then, deny that the same disease, under other circumstances, partakes of that variety of ague misnamed *continued fever*?"

But granting that pleurisy does partake of the nature of continued fever, is continued fever commonly benefited by quinine or arsenic? Dr. Dickson says "Yes!" Experience says "No!" and we are content to side with the latter. The subvertor, who is not deficient in ingenuity, relies much on the fact that continued fevers are not in reality perfectly continuous, but have their remissions and exacerbations. To attest this he quotes Drs. Thomson and Shearman, and might have quoted Cullen*.

* "I would say, therefore, that there is no such fever as the schools have agreed to call a 'continent'; but that every fever which runs out to more days than one, is formed of repeated paroxysms, recurring in the course of twenty-four hours, or truly consists of diurnal exacerbations. * * * To all this I would add, if it can have any weight, that in the course of nearly forty years' pretty extensive practice, I have never observed what I could call a continent fever, but could always discern, by

* Spectator, No. 59.

† The Unity of Disease Analytically and Synthetically proved, with Facts and Cases subversive of the received Practice of Physic. By Samuel Dickson, M.D., &c. London, Edinburgh, and Dublin, 1838.

The simple answer to this is, that although, in strict logic, *majus et minus non variant speciem*, in physic, as in common life, we are obliged to admit the essential difference of things which differ only in degree. If the servant of the most zealous logician were to bring him for breakfast only the one-hundredth part of his usual fare, he would hardly be persuaded that this was his regular meal in a slighter form, but would consider it as no breakfast at all; and thus, when the remission of symptoms is trifling, it may be safely neglected, but cannot be safely made the chief indication of treatment. On this point experience is our sure guide. The tonic treatment of fevers, including the use of bark, was formerly common enough, and was discontinued only because its results were unsatisfactory. There are exceptions, unquestionably; but the rule seems to us well made out.

The truth is, that the pendulum of medical practice, not only in fevers, but generally, is constantly vibrating between the antiphlogistic and the tonic systems. It was long on the former side of the arc, and is, perhaps, still too much inclined that way; but vast efforts have been made of late years to drag it to the tonic side; and Dr. Dickson's lively, but unsound, treatise is a mere indication of changing sentiments in the medical republic—a straw that shows which way the wind blows. If, indeed, it were a solid reason for employing antiperiodic remedies in every case, that all diseases have remissions, the antiphlogistic physicians would have been almost equally justified in their use of the lancet, as nearly every case shows some slight mark of inflammation. The hepatic doctors, too, would allege in their defence, that almost every patient, when sufficiently pushed about the

right side, shows some token of uneasiness.

Dr. Dickson has reduced the practice of physic to such extreme simplicity, and has made diagnosis so unnecessary, that we cannot be surprised if so troublesome a method of arriving at knowledge as the stethoscope, meets with no favour at his hands. In good truth, "the wooden oracle," as Dr. Dickson calls it, becomes merely an ugly toy, as soon as we know that every distemper is at bottom intermittent fever. Why bore the patient with the ominous tube, when every question in the catechism of disease requires the same answer? What is empyema? Intermittent fever. What is emphysema? Intermittent fever: and so on to the end of the chapter.

If, indeed, the stethoscope were used to the exclusion of all other methods of investigation—if the practitioner thought much of ascertaining the disease, and little of relieving it—we should be inclined to cry out against it as lustily as Dr. Dickson; for a practitioner who can adopt only one mode of investigation, like him who can see only one disease, is not a very useful member of the profession; his performances are like a tune played on one string, which even Paganini could not long make supportable. But when the stethoscope is used to assist other inquiries, and not to supersede them, it is so valuable an ally, that had the present age witnessed no other improvement in physic, it would of itself stamp it as an era of advance.

Celsus has said that the pulse is most deceitful, and so it is, singly; yet we all feel the pulse—Dr. Dickson, perhaps, not excepted. Boerhaave observes, with his usual discrimination, that chemistry is an excellent hand-maid to medicine, but a very bad mistress; yet as we do not reject chemistry, let us also retain the stethoscope.

As for remedies, Dr. Dickson's list of them is pretty long; he is not an ex-

attentive observation, more or less of exacerbation and remission."—*Cullen's Works*, vol. i. pp. 511 and 512, ed. 1827.

SOCIETY FOR RELIEF

OF

WIDOWS AND ORPHANS OF
MEDICAL MEN

IN LONDON AND ITS VICINITY.

clusionist here. Baths, cold affusion, mineral waters, exercise and change of air, plasters, bandages, emetics, purgatives, mercury, bark, quinine, prussic acid, tar, creosote, opium, morphia, alcohol, musk, valerian, camphor, asafoetida, sulphur, guaiac, turpentine, copaiba, eubeb, cantharides, squill, digitalis, iodine, arsenic, and iron, all figure in the catalogue. So that if a cough under the new system is never to appear, excepting under the name of intermittent fever, it is, nevertheless, permitted to keep company with squill: like a new-married woman who still associates with her school-fellows. Or, as Dr. Dickson expresses it, "these agents have all more or less control over intermittent fever: they exert, moreover, a special influence over particular organs, and consequently are capable of curing, causing, or aggravating diseases attended with certain local peculiarities."

On the whole, Dr. Dickson's treatise, though by no means void of pith and point, is far more amusing than instructive. He has pointed out, indeed, some of the misdeeds of the antiphlogistic system, or rather of the antiphlogistic mania; and he has given a number of instances where well-marked intermission accompanied a great variety of diseases; but he has entirely failed to show that the slight remissions of continued fever, or other maladies, place them in the same class, therapeutically, as intermittent fever. This could only be done by giving a long series of cases treated on this plan, with the results; but this the subvertor of the received practice of physic has not done. To the student we would say, do not examine each new patient with a predetermination to find disease in the liver, the heart, or the kidneys; nor with the fixed belief that calomel or that quinine is a panacea; but judge each case on its own merits, and aspire to the glory of being an eclectic physician!

MEDICAL men are said to give more time than money in charity; lawyers more money than time. Perhaps the two gifts are never more agreeably and beneficially bestowed than at the annual dinners of this excellent society, one of which took place last Saturday at the Freemasons' Tavern, and was attended by about fifty members and others. A numerous list of stewards, more than half of whom had volunteered their services for the second or third time, and most of whom discharged actively and zealously the duties of their office, secured those appliances without which physiologists well know that even the most fervent charity is apt either to neglect its work, or to do it in a slovenly and ungraceful manner. In proposing the health of these gentlemen, Sir Charles Clarke well remarked, "that he considered their office to be one of great importance, for the existence of stewards was necessary to the existence of a dinner; and how much good is done by the dinner was proved by the list of donations which the treasurer annually receives and announces on that occasion, the contributions being usually very large in proportion to the numbers assembled." The usual loyal and patriotic toasts were followed by "The Royal Colleges of Physicians and Surgeons, and the Society of Apothecaries;" in acknowledging the last of which Dr. Merriman happily remarked, "that whatever contribution that body might have made to public or professional improvement, there was one example which might be suggested for the imitation of the two Royal Colleges; viz., the giving an annual benefaction to the funds of this society. A little business, but not enough either in quantity or quality to interrupt the most laborious digestion, was done, by the distribution of the annual statement in an amended form, calculated to shew more clearly the existing state of the society, the claims upon it, and its resources, with a passing comment therein by Mr. Bacot, the acting treasurer, who alluded to the rigid investigation now being made by the finance committee, as to the best means of rendering most beneficial and permanent the means at the disposal of the Society. Donations were then announced to the amount of £125. 11s. Dr. Burrows, chairman of that committee, though of course he would not anticipate any of the results of its deliberations, took the opportunity of reminding the members of the

Society in general, and the Court of Directors in particular, of the very effectual service they might render the Society, and through it to the profession, by giving their attendance at the half-yearly and quarterly courts, and by promoting the extension of the Society among their friends with such zeal as their personal experience of the good it was the means of doing would then imperatively call upon them to manifest. A comparative view of the state of the Society's funds, and the number of its members at different times, led unavoidably to the conclusion, that its well-being or otherwise depended in great measure directly on the exertion of its members; and he trusted that a beneficial impulse had recently taken place, which would be permanently and advantageously continued.

Sir Henry Halford presided with his usual good taste during the early part of the evening, and announced the sixteenth donation of 10*l.* from H. R. H. the Princess Sophia. On his leaving the chair, it was taken by Sir Charles Clarke, who gave the healths of Dr. Turner, Dr. Merriman, and other warm supporters of the society; and in returning thanks for the cordial manner in which his own health was welcomed, expressed, with so much genuine emotion, his love for his profession, and his feelings towards the members of it, as deeply affected all present who knew how the truth of his assertions had been borne out during a long life marked by undeviating integrity, and a studious regard for the honour and welfare of every professional man who has ever, in his person or in his character, been placed in relation to him.

OBSERVATIONS ON THE DISEASES OF CHILDREN.

BY DR. COLLIN.

THE balance of the system is more easily destroyed in children than in adults; but it is also more easily restored; their diseases far more readily become violent, but are likewise more readily overcome. Nature is here often sufficient of herself, when she can act undisturbed. Hence in children's diseases, the physician must not be too quick in prescribing medicines, particularly when the indisposition is slight, nor give those which are violent; he should rather be passive, and adopt the expectant method, taking care, nevertheless, to watch the patient's condition, lest he should overlook the cases where it is necessary that art should interfere. But if the physician is driven by the parents or friends to prescribe something from the druggist's shop, against his will, he must choose some remedy,

which is very mild, and at the utmost promotes the secretions and excretions a little; for instance, a very weak solution of tartar emetic, a solution of acetate of potash, a saline emulsion, &c. When diseases have been improperly interfered with, and brought into such a confused state that nothing remains but an impenetrable chaos of symptoms, we advise, with Tourtual, that all remedies should be discontinued, and that the practitioner should merely watch the patient's state, until the influence of accessory circumstances has ceased, and, what was doubtful in the symptoms gradually disappearing, the nature of the disease becomes manifest. Moreover, there are several disorders, such as small-pox and whooping-cough, which have their fixed course, and which can very rarely be shortened by any remedy; so that it would not only be useless but hurtful to torment the child with physic, if other circumstances do not demand it. In the case of a sucking infant, there is another point to be considered, which often causes the medicine given it to be of no advantage; namely that the disease of the child lies in the mother or wet nurse. We sometimes see that during lactation the mother becomes healthy, while the child falls sick. Unwholesome food and drink, the occurrence of the catamenia, or emanations of the mind, may alter the mother's milk, and thus be of most dangerous consequence to the infant.

A child, aged six months, was attacked by an eruption every four weeks; and various medicines were given both to nurse and infant, without the smallest effect. At last the nurse was changed, and the eruption suddenly ceased, without the use of any medicine. The fact was, that the previous nurse had an ulcer on her foot, which she did not mention, and the eruption occurred each time during her catamenial period. It is obvious how useless it must be in such cases to give medicines to the child; they must be taken by the nurse, and if the disease still continues, the nurse must be changed.

Action of Medicines on Children.—A remedy which in an adult of firm and dry temperament would have little or no effect (except raising the pulse a few beats), may act most powerfully on a child, and may even be sufficient to excite violent fever. It often happens, therefore, that we attain our end in children's diseases much sooner by mild remedies, such as dietetic ones, than by medicines properly so called; and we see daily that a proper regulation of the diet and regimen, in harmony with the character of the distemper, is sufficient to overcome it. This is particularly true among the poor, when their children are suffering under chronic diseases, which

often arise from bad nursing, or inappropriate diet. But if the child's state really requires medicine, we must always begin with a mild one, and never use a violent one, except with the greatest caution and in small doses; for at first we do not know the individual constitution of the child, which may have as many anomalies as that of an adult. If the child has an excess of sensibility, it will be powerfully and dangerously affected by small doses of volatile remedies, particularly if they contain a narcotic substance; on the contrary, remedies are of small force with a child of predominant reproductive power. Thus, Jahn saw a drop of tincture of opium produce ten hours' sleep in a child eight days old; and Voigtel saw the most critical symptoms produced by a quarter of a drop in a child born at the full time.*

Many cases, no doubt, will be advantageously cleared up, as soon as the practitioner accurately examines the habit of the child, and inquires into the constitution of the parents; but this is not always sufficient, and may often deceive. The general rule is, that in the diseases of children we must use medicines but sparingly, and follow the expectant method, particularly in the exanthemata and acute diseases. But there are exceptions; for in some maladies, especially hydrocephalus and cramp, energetic treatment must be employed.

As children are so easily affected by remedies, practitioners have thought themselves authorized to fix the doses of medicines according to age. This is considering a child as a miniature of an adult. But, in truth, the child's frame differs not only in the size of its organs, but in their quality, form, and intimate relation; from which it follows, that a remedy acts differently, not only from its dose but also by reason of its quality. This inequality depends more on the physiological state of the organs than on age. Moreover, the process of development causes great inequality in the effect of remedies, without taking into consideration the individual constitution of the child. Hence it is quite impossible to lay down a general dose of a remedy which shall be applicable to all cases; and if a table of this kind is practically useful to a certain extent, each class of remedies requires its own rules, without even referring to the periods of development. In order to set this forth more clearly, we will briefly go through the different classes of remedies †.

* It is scarcely necessary to remind the reader that the tincture of opium is by no means of the same strength throughout Europe. In the Saxon Pharmacopœia, if we recollect aright, it is more than double the strength of the London tincture.

—TRANSLATOR.

† Only two classes of remedies are commented

Volatile stimulants.—It follows, from the irritability of children, that these medicines act strongly upon them. It often happens, too, that this irritability is increased by disease, and yet the strength of the little patient has sunk so much that the less experienced physician is easily, but erroneously, led to give stimulants: experience, however, teaches that this state of weakness is often only apparent, and is caused by the living forces being obstructed in their action without being depressed; so that the weakness will not be removed by stimulating these forces, without removing the obstructions in their way. Hence it is not every stimulant that suits a child. This is particularly true of wine, the ethers, ethereal oils, and plants which contain similar substances, preparations of ammonia, and camphor. Many children have an idiosyncrasy which revolts against camphor, so that their face becomes pale after taking it, with restlessness, anxiety, and dyspnoea; and their condition is rendered much worse. Yet cases may occur where such remedies are necessarily indicated; but the physician must then be very cautious, and give them in combination with such medicines as will deprive them of their heating quality. He must begin, too, with the weaker remedies, and proceed only by degrees to the stronger ones; which, however, in many cases cannot be dispensed with.

The following remedies of this class are very useful for children:—

1. *Saffron*.—This is undoubtedly a stimulus to the vascular system, increasing the warmth of the body and adding to the liveliness of the senses; hence it must be used with caution if the patient is feverish, but it is a very soothing nervous remedy, and does not cause constipation. The physician who knows how to estimate the efficacy of saffron, will often be able to dispense with opium, which is, in general, an adventurous remedy in children's cases. Saffron is one of the principal ingredients in Hufeland's *Kinderpulver* (children's powder); besides which, we have the syrup of saffron, which is composed of saffron, sugar, and water. It has a pleasant taste, and is a valuable preparation.

2. The *Liquor ammonii succinatus* stimulates the circulation of the blood, and must therefore be used with caution in fevers; but it is very antispasmodic, removes excitement of the nervous system, and acts strongly upon the skin. Children bear this remedy very well, even sucklings; and even gastric disease, or a state of inflammation, is rarely a contra-indication to its use. It is of excellent service in spasmodic states, flatulent colic, tympanitic

upon in the present article; but a continuation is promised.—TRANSLATOR.

swelling of the abdomen caused by spasm, and towards the end of diseases, when the practitioner wishes to act on the skin and stimulate at the same time.

3. Several German Pharmacopœiæ contain another preparation under the name of *Liquor ammonii anisatus*, or *Alcohol ammoniæ anisatus*. According to the fifth edition of the Prussian Pharmacopœia, it is prepared with four ounces of concentrated spirit, a drachm of oil of aniseed, and an ounce of caustic solution of ammonia. This preparation, likewise, is a very suitable remedy for children, acting as a stimulus, but more gently than the *Liquor ammonii succinatus*; it is antispasmodic, soothing, carminative, and sudorific. When given in small doses in a mixture with some aromatic water and a little pleasant syrup, it is an agreeable medicine to take. It is suitable in the same cases as the former one, and is of particular efficacy in catarrhal affections of the lungs and trachea, in the stage where the secretion of mucus is increased, and we find, from a rattle in the breathing, that the mucus is not easily coughed up. Small doses are, on the whole, much better than large ones; it is administered to an infant at the breast, in the dose of two, or at most five drops every two hours, combined with fennel water and syrup of mallow, or with the addition of *Liquor ammon. succin.*, or *Vin. Antim. Tart.* For external use, a drachm of the *Liq. ammon. succin.* may be mixed with half an ounce of *Ung. nervinum*,* and a bit the size of a hazel-nut may be rubbed, morning and evening, on the abdomen and chest. This is a very useful antispasmodic, soothing, and carminative remedy, when there is no fever present.

Tonic remedies.—These are commonly employed to restore the strength which has been lost in maladies of long duration, but they are rarely wanted for this purpose in children, because their convalescence is generally rapid, and if a proper diet is used, may be left to Nature; nay, after violent inflammatory diseases, they are injurious, and might cause a relapse. Hence, with children, an after-course of bark, iron, or bitters, must not be too hastily adopted.

1. *Cinchona* is less indicated than in adults; with the exception of a few diseases, such as intermittent fever, and the last stage of hooping-cough. When given in substance, older children digest it with difficulty, and infants at the breast not at

all; as an extract, it causes flatulence, colic, nausea, vomiting, and congestion in the head; but most of these inconveniences are avoided by the use of the sulphate of quinine. This medicine is more easily digested, and can be more conveniently given to a child. Moreover, it is not so much contra-indicated by gastric symptoms, and is most excellent in intermittent fevers, especially in masked and malignant fevers, where life is often rapidly extinguished before the gastric irritation is removed, unless large doses are given before the next paroxysm, which are then always sufficient. Dr. Collin generally gives a mixture, composed of eight or ten grains of sulphate of quinine in two or three ounces of water, with eight or ten drops of [dilute] sulphuric acid to make it more soluble, adding enough syrup to disguise the bitter taste; a tea-spoonful is the dose, and as much is given as is requisite for the object required. Tortual prefers it in the form of powder, with sugar; and gives a sucking infant a quarter of a grain, and older children from a half to a whole grain every two or three hours. In spite of these advantages the remedy has its inconveniences: it is a strong stimulus to the vascular system, and increases congestion in the head; nay, some French writers assert, that they have seen it produce inflammation of the stomach.* In this respect it may be compared with spirituous and ethereal remedies. Indeed, the author has seen large doses of quinine produce a state in children entirely resembling intoxication from spirituous liquors. Hence, its use requires great caution, particularly in children with predominating irritability, during inflammatory fever, and during teething. Moreover, though it possesses tonic powers in a high degree, it does not contain all the constituent parts of cinchona; it acts more quickly and strongly, but not so lastingly. Hence, quinine cannot be a substitute for cinchona in every case.

2. *Iron* is in the highest degree tonic and strengthening, but must be used in children with the greatest caution. It stimulates the vascular system very forcibly; augments the rapidity and strength of the circulation; and is apt to cause ebullition of the blood, and congestion in the head. Its secondary action is upon the whole frame. Iron gives it greater energy and activity; increases plasticity; gives every organ greater firmness and strength; and diminishes secretion and absorption. It requires strong digestive powers, being apt to cause nausea, vomiting, cardialgia, colic, and tympanitis. Its use, therefore, is quite

* Gray says, in his Supplement to the Pharmacopœia, (4th edit., p. 458) "*Ung. nervinum. ol. laurini, 3 lb., ung. sambuci virid. 1 lb., axungie, 2 lb., ol. succini, 4 oz.*: the original ointment had a number of herbs, boiled in *ol. nervini, lb. v., seri, lb. ij.*, and was scented with *ol. spice 1½ oz.*"

It is obvious, that the doses recommended by Drs. Collin and Tortual are far too large. Half the quantities proposed in the text would still be more than ample.—TRANSLATOR.

inadmissible in those diseases of children where there was already increased plasticity, and unusually violent irritability; moreover, it is very hurtful in gastric disorders: Nor should iron be given to children of a sanguine temperament, or to those who have a very irritable vascular system; or suffer from a sub-inflammatory condition of the lungs; or who have great irritability of this organ, with a disposition to phthisis florida. But there are some diseases of children where this remedy is not only beneficial but indispensable; namely, in atonic scrofula and rickets; in children with a pale and puffed face, great flabbiness of the limbs, diminished irritability, and excess of serous and mucous fluids; and, in general, in all dyscrasias, founded on a watery, leucophlegmatic quality of the blood and the lymphatic fluid. It here appears to penetrate both the fluid and solid parts, making the blood thicker, and richer in red particles, and the complexion more blooming. It gives firmness and strength to the irritable fibre, and a higher degree of tension to the cellular substance and the skin; and, by its tonic qualities, it removes obstructions and swellings, caused by atony in the glandular and vascular system. The mild preparations of iron in the Swedish Pharmacopoeia are:—*trochisci citratis ferri*, *tartras kalico-ferricus*, *murias ammonio-ferricus*, and *hydras ferricus*. The *vinum ferricum* is more stimulating as a medicine for children, because it contains cinnamon and wine. The *ferrum pulveratum* is not easy to digest, being apt to cause nausea, pain in the stomach, constipation, and other gastric symptoms. It should seldom, therefore, be given to children, and never without the addition of aromatics, although they increase irritability.—*Schmidt's Jahrbücher*, from the *Tidskrift för Läkare*.

PREMATURE LABOUR ARTIFICIALLY INDUCED IN A DWARF.

By M. DUBOIS.

THE subject of this case is a dwarf, æt. 23, 3 feet 2 in. 9 l. high, whose father was only 3 feet 6 in., but whose mother was of ordinary size. These, her parents, had six children, of whom three were dwarfs. Two years ago, M. Dubois attended her in her first labour; when he was called in she had then had pains for 48 hours; on the previous evening she had had convulsions, and she lay in a kind of stupor in a *cradle*. The labour appeared in an advanced stage, for the child's head could easily be felt in the hollow of the pelvis; but further than this it could not pass, and the forceps

could not be applied. The child was evidently dead, and M. Dubois, therefore, perforated the head, and it passed on to the vulva. Here, however, there was a fresh difficulty, for the vulva was narrow in correspondence with the stature of the individual. Happily, it soon enlarged spontaneously by a rupture which passed backwards and on one side towards one of the ischia, and the labour was terminated. The child, without its brain, weight 5½ lbs; its length was 7½ inches. The patient went on satisfactorily after the labour, and soon recovered. The state of stupor in which she was at the time of the *accouchement* almost prevented her feeling the pains.

Last year, she again became pregnant; but this time, (says M. D.) in conformity with my recommendation, she came to announce it to me early. She had, when she came to me, been pregnant since about last June; and I found by the examination of the pelvis, that its diameters were not proportioned to the presumed dimensions of the fœtal head, for the pubo-coccygeal was not more than 3 inches.

Admitted to the obstetric clinique, we found on examination, that the uterus was but little developed and the fœtus small. In February, she was in the eighth month of her pregnancy; and the abdomen then enlarged considerably in the space of a few days, so as to cause some fear that the *accouchement* might be rendered difficult by a superabundance of liquor amni. Having decided on inducing premature labour, I had to choose between rupture of the membranes, dilatation of the neck of the uterus with prepared sponge, and the administration of the ergot; I decided on the two last. The patient having taken a bath, was placed on the edge of the bed, and a speculum was introduced; a portion of prepared sponge, an inch long, and cut in the form of a cone, was placed in the neck of the uterus, and over it another moist sponge to keep it in its place; they were fixed by a thread, and six grains of ergot of rye were administered. The patient was then put to bed. Four hours after, she felt strong pains, and was in active labour; it appeared indeed to be going on so rapidly, that I withdrew the sponge. At nine in the evening, there was a full protrusion of the membranes, and I ruptured them and found that the buttocks presented. The fingers were applied on the haunches to facilitate their exit; the head remained at the superior aperture; drawing downwards a few times, and movements of flexion, brought it into the hollow; and at last it came out entirely. The child breathed immediately; it was 15 inches long; the biparietal diameter was 3 inches; the

occipito-frontal 3 inches and 2 lines: it weighed 3 lbs. 12 oz. The size of the child was therefore small: yet it was not a dwarf. The mother nourished it for a few days, but the secretion of milk soon ceased: on the twentieth day the woman was perfectly recovered.

M. Dubois adds some details as a supplement to this history. The father of the child is a man of ordinary stature; he is about 5 feet 7 inches high. The first sexual connections were very painful: but the periods of pregnancy were easy.

Nothing is more rare than the accouchement of dwarfs: for there is but a single authentic fact, which is related in the work of Geoffrey Saint-Hilaire. The woman, who was to have been confined at London, died. It is to be observed, that the child of this woman is not a dwarf: dwarfs are born much smaller. The mother herself was born extremely small; she passed all her infancy on a table seated on a cushion. There is but one exception to this rule, an English dwarf exhibited in 1770; he was born of the usual size, but at the age of one year his growth was suddenly arrested.

I have, of course, no need to justify the measure which I adopted in this case. It cannot be compared with an operation, of which the result would be to sacrifice the mother or the child, or both at once. More than two hundred cases that have now come to my knowledge, prove that the plan I adopted is not so serious a thing as might be imagined; half the infants, and an immense majority of the mothers, have survived it. Still, the Cæsarean operation is certainly not in all cases to be superseded by the production of premature labour; each of these operations, as well as the division of the symphysis, and embryotomy, has its own special indications. — *Gazette Medicale, Mars 14, 1840.*

SUCCESSFUL TREATMENT OF A CONGENITAL UMBILICAL HERNIA.

By Prof. CEDERSCHJOLD, of Stockholm.

THE umbilical ring was open in this case, and had probably a diameter at least of an inch, through which the intestines, covered only by peritoneum, protruded, and formed a mass as large as a fist. The umbilical cord came out from the most prominent part of the tumor. The protruded intestines could not by gentle pressure be returned into the abdominal cavity through the ring, and it was by chance discovered that they were full of meconium, which the child had not yet evacuated. A laxative medicine was therefore ordered

to be introduced, before the intestines were replaced. Five teaspoonfuls of castor oil were given before the bowels acted; the hernia then became soft; and by placing the child on its back, its reduction was easily accomplished. The sac, consisting of the peritoneum only, being emptied, a ligature was tied close to the umbilicus, which falling off after 14 days, the navel was found completely healed, and just like that of a healthy child. — *Schmidt's Jahrbucher.*

SOUNDS OF THE HEART.

To the Editor of the Medical Gazette.

SIR,

I PERCEIVE that Dr. Billing, in making some remarks upon the causes of the sounds of the heart, in the MEDICAL GAZETTE for the 3d of this month, accuses Dr. Todd of having *misrepresented* his opinions on that subject, in the article "Heart, in the Cyclopædia of Anatomy and Physiology." As I am the author of that article, and therefore responsible for its contents, I consider myself called upon to exonerate Dr. Todd from this charge brought against him by Dr. Billing. The complaint made by Dr. Billing is, that in the article alluded to, he is represented as attributing the first sound of the heart to the rapid approximation of the auriculo-ventricular valves during the systole of the ventricles; while in fact his opinion is, that it depends upon the tension produced in the shutting of the auriculo-ventricular valves.

As in writing such an article, it would neither have been interesting nor profitable to notice at any length the speculations of every one who had written on the sounds of the heart, I was obliged to classify them as much as possible; and as Rouanet, Dr. Billing, Mr. Bryan, and M. Bouillaud, had all supposed that the first sound was due to some of the changes induced in the condition of the auriculo-ventricular valves during the systole of the ventricles—an opinion which I believed to be fully disproved by experiments to be afterwards mentioned—I thought it sufficient to say, that these authors referred this sound to the rapid approximation of these valves, without entering into each individual explanation, as to whether this was produced by the tension of these valves, or by the flapping of them together.

I beg to assure Dr. Billing, that the cursory manner in which I have noticed his opinion on the cause of the first sound of the heart, is due to the circumstances mentioned, and assuredly not to the slightest desire or intention of misrepresenting it.

JOHN REID, M.D.

Royal Infirmary, Edinburgh,
April 13, 1840.

A TABLE OF MORTALITY FOR THE METROPOLIS,

239

Showing the Number of Deaths from all Causes, registered in the Four Weeks ending April 25, 1840.

Causes of Death.	April 1840.				Weekly Average, 1838.
	Mar 29—Ap. 4.	5th—11th.	12th—18th.	19th—25th.	
Small-Pox.....	7	11	6	6	73
Measles.....	14	13	21	20	11
Scarlatina.....	45	34	36	36	29
Whooping Cough.....	16	17	30	33	40
Croup.....	8	9	5	9	7
Thrush.....	4	1	3	2	6
Diarrhœa.....	2	2	..	5	8
Dysentery.....	1	1	1	..	2
Cholera.....	1	..	..	..	.3
Influenza.....	1	2	..	..	1
Typhus.....	30	23	31	30	78
Erysipelas.....	9	7	5	6	8
Syphilis.....	1	1	..	..	1
Hydrophobia.....	..	..	..	..	.2
Total	139	121	138	147	265
Cephalitis.....	11	9	10	7	10
Hydrocephalus.....	36	36	41	46	34
Apoplexy.....	23	18	12	17	19
Paralysis.....	24	18	14	11	14
Convulsions.....	51	56	74	65	67
Epilepsy.....	6	5	6	4	4
Insanity.....	3	..	..	1	1
Delirium Tremens.....	2	..	3	1	1
Dis. of Brain, &c.....	13	4	6	13	6
Total	169	146	166	165	156
Quinsey.....	5	2	1	..	2
Bronchitis.....	11	7	15	14	8
Pleurisy.....	3	2	1	..	2
Pneumonia.....	85	68	74	78	71
Hydrothorax.....	6	3	3	4	6
Asthma.....	35	23	33	20	28
Consumption.....	145	159	149	144	146
Dis. of Lungs, &c.....	20	17	13	14	10
Total	310	281	289	274	275
Pericarditis.....	..	1	..	..	.3
Aneurism.....	1	2	..	2	.5
Dis. of Heart, &c.....	19	22	20	17	15
Total	20	25	20	19	16
Teething.....	13	14	21	15	15
Gastritis—Enteritis.....	11	16	11	11	17
Peritonitis.....	1	3	2	1	1
Tabes Mesenterica.....	4	6	4	5	3
Ascites.....	..	..	..	2	.4
Ulceration.....	3	..	..	1	1
Hernia.....	3	2	..	5	2
Colic or Ileus.....	..	1	1	2	4
Dis. of Stomach, &c.....	2	7	9	3	4
Hepatitis.....	..	..	2	..	1
Jaundice.....	3	2	3	2	2
Dis. of Liver, &c.....	4	9	2	10	7
Total	44	60	55	57	57

Causes of Death.	April 1840.				Weekly Average, 1838.
	Mar 29—Ap. 4.	5th—11th.	12th—18th.	19th—25th.	
Nephritis.....	..	..	1	..	.5
Diabetes.....	..	..	..	..	.4
Stone.....	..	..	1	1	.4
Stricture.....	..	2	..	..	.6
Dis. of Kidneys, &c... ..	2	3	1	3	3
Total	2	5	3	4	5
Childbed.....	5	6	5	7	8
Ovarian Dropsy.....	..	..	..	..	.3
Dis. of Uterus, &c. ..	6	..	1	2	2
Total	11	6	6	9	10
Rheumatism.....	4	3	2	4	4
Dis. of Joints, &c. ...	2	4	5	4	4
Total	6	7	7	8	8
Ulcer.....	..	..	..	..	.4
Fistula.....	..	1	1	1	.4
Dis. of Skin, &c. ....	..	..	..	1	.4
Total .....	..	1	1	2	1
Inflammation.....	11	6	4	7	18
Hæmorrhage.....	2	3	4	4	4
Dropsy.....	43	30	32	36	34
Abscess.....	2	4	7	3	4
Mortification.....	8	5	7	6	4
Scrofula.....	3	4	2	2	1
Carcinoma.....	7	10	9	5	6
Tumor.....	1	1	3	2	1
Gout.....	1	2	1	1	1
Atrophy.....	7	3	2	5	4
Debility.....	33	9	18	18	12
Malformations.....	..	1	2	1	1
Sudden Deaths.....	27	9	6	16	12
Total	145	87	97	106	102
Old Age, or Natural } Decay.....	78	85	68	67	79
Intemperance.....	..	..	1	..	.4
Privation.....	..	..	..	..	.6
Violent Deaths.....	48	25	31	28	25
Total	48	25	32	28	26
Causes not specified..	4	2	3	2	13
Deaths from all Causes	976	851	885	888	
Weekly Average, 1838	..	..	..	..	1013

April 1840.	AGES.		
	0—15	15—60	60 & upwards.
Mar. 29—Ap. 4.....	387	361	233
5th—11th.....	366	309	176
12th—18th	399	311	175
19th—25th	408	304	176
Weekly } Average, 1838 }	466	332	192

Estimated Population, 1840.	Mar. 29th—Ap. 4	5th—11th	12th—18th	19th—25th	Weekly Average, 1838.
West Districts, 308,920	158	134	144	144	156
North Districts, 414,458	180	162	189	160	172
Central Districts, 369,722	189	155	151	174	208
East Districts, 411,635	203	178	190	186	239
South Districts, 450,265	246	222	211	224	238
1,955,000	976	851	885	888	1013

IRISH PHYSICIANS.

(From a Correspondent.)

By the charter of the Irish College of Physicians, no person is permitted to practise as a physician in Ireland, unless a licentiate of the College, or a medical graduate of the University of Oxford, Cambridge, or Dublin. This prohibition, not being confirmed by act of parliament, has heretofore, been considered as nugatory; but an eminent lawyer, it is said, takes another view of the matter, and considers that, as the authority of the Irish College of Physicians, and of all the Universities of the empire, emanate from the same source, the Crown, the negative and positive enactments thence proceeding must be put on a level; and that therefore, whatever right a medical degree confers as to practice in general, the license of the Irish College of Physicians, or a degree of one of the Universities first mentioned, confers, as to the exclusive right of practising in Ireland.

ETHEREAL SOLUTION OF ERGOT.

To the Editor of the Medical Gazette.

SIR,

HAVING had numerous applications made to me by members of the profession, desiring to know where they can obtain the "Ethereal Solution of Ergot," an account of which you so politely inserted in your journal of the 10th inst.: may I be permitted to inform them, that it is now prepared by Mr. Dear, pharmacist, 89, Bishopsgate-street Within.—I am, sir,

Yours most truly,

JOHN C. W. LEVER,

Ass. Accoucheur to Guy's Hospital
Lying-in Charity.Guy's Hospital,
April 21, 1844.

RECEIVED FOR REVIEW.

The Library of Medicine, arranged and edited by Alexander Tweedie, M.D., F.R.S. Vol. I. Practical Medicine. Whittaker and Co. 1840.

A Treatise on Amaurosis and Amaurotic Affections. By Edward Octavius Hocken. Higley, 1840.

A Natural History of Quadrupeds and other Mammiferous Animals. Part III. Whittaker and Co., April, 1840.

Odontography, or a Treatise on the Comparative Anatomy of the Teeth. Illustrated by upwards of 150 plates. By Richard Owen, F.R.S. Part I. containing seven sheets of letter-press and fifty drawings by Mr. J. Denkel, and engraved by Mr. L. Aldous. Baillière, 1840.

Commentaries on Diseases of the Skin. Illustrated by coloured plates. By Anthony Todd Thomson, M.D., Professor of Materia Medica and Therapeutics, and Medical Jurisprudence, in University College, London. Fas. III. representing Pityriasis, Herpes, and Rupia. Taylor and Walton, 1840.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, April 9.

P. G. Price, Margate.—S. Brooke, Margate.—F. H. Lerew, London.—W. Blackburn, Yorkshire,

Thursday, April 16.

W. Frodsham, London.—J. Harrison, Liverpool.—M. Treacy, Whitehaven.—W. H. Hardcastle, Leeds.—R. J. Mann, Thorpe, Norwich.—T. Williams, Swansea.—Richard Leacroft Freer, Stourbridge.—J. R. Ede, Stonehouse, Devon.—G. C. Steel, London.

Thursday, April 23.

S. H. Ward, London.—R. C. Kersey, Framlingham, Suffolk.—F. Prince, Balsham.—P. R. Steeman, Truro.—P. L. Burchell, London.—T. Wilson, Hull.—W. Bradshaw, Hull.—H. Halkyard, Oldham.—W. T. Douglas, Northamptonshire.—J. Dunn, Wireliscombe.—J. T. Dunn, Scarborough.—J. G. Phipps, London.—W. Newbegin, Norwich.—J. B. Nevins, Leeds.

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, April 28, 1840.

Abscess . . .	1	Heart, diseased . .	2
Age and Debility .	19	Hernia . . .	1
Apoplexy . . .	3	Inflammation . .	4
Asthma . . .	4	Bowels & Stomach .	3
Consumption . .	22	Brain . . .	3
Convulsions . .	21	Lungs and Pleura .	5
Croup . . .	1	Miscarriage . . .	1
Dentition . . .	3	Mortification . .	1
Dropsy . . .	5	Rheumatism . . .	1
Dropsy in the Brain	8	Sore Throat & Quinsey	1
Erysipelas . . .	2	Unknown Causes	67
Fever . . .	6	Casualties . . .	6
Fever, Scarlet . .	7		
Fever, Typhus . .	1		

Increase of Burials, as compared with }
the preceding week } 10

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

April.	Thermometer	Barometer.
Wednesday 22	from 46 to 65	30.11 to 30.21
Thursday . 23	43 66	30.25 30.23
Friday . . 24	40 71	30.20 30.13
Saturday . 25	39 73	30.11 30.12
Sunday . . 26	40 72	30.17 30.26
Monday . . 27	39 73	30.26 30.26
Tuesday . . 28	40 74	30.22 30.19

Wind W. on the 22d; S.W. on the 23d, and morning of the 24th; S.E. on the afternoon of the 24th and following day; N. on the 26th, N.E. on the 27th, and E. on the 28th.

The 22d generally cloudy, with a little rain during the evening; otherwise clear,

CHARLES HENRY ADAMS.

WILSON & OOLVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, MAY 8, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISEASES OF TENDONS, *continued.*

CLUB FOOT, *continued*—*Reparation of Tendons—Appreciation of means of Treatment.*—*PERMANENT FLEXION OF THE LEG—Causes—Treatment.*—*WRY NECK—Nature—Causes—Treatment.*—*STRABISMUS.*—*RETRACTION OF THE FINGERS—Nature—Causes—Treatment.*—*Diseases of Tendinous and Subcutaneous Bursæ—their Nature and Treatment.*

THE section of the tendo-achillis having been made, the work of reparation soon commences. For many hours after the operation the extent of separation is very distinctly felt; after that, the tumefaction of the surrounding tissues contributes to fill up the space, and as the tumefaction diminishes the secreted and extravasated fluids accomplish the same objects, so that by the tenth to the twelfth day the continuity of the tendon seems established. From a fortnight to three weeks is necessary before the intermediate substance is sufficiently resistant to admit of strong flexion of the leg, and from this moment the patient may walk with little assistance at the part. The feebleness of the muscles causes the walk to want assurance, but practice soon improves it.

In brute animals, the dog for instance, we find, if we sacrifice an extensor tendon, that at the end of the second or third day the cellular sheath is thickened and inflamed, sometimes full of blood, and that

this blood is transformed into a compact coagulum, which is confounded with the extremities of the tendon and the surrounding parts; if much blood be not effused, an albumino-fibrinous mass is formed and occupies the same place: the extremities of the tendon contract, as if surrounded by a ligature, the intermediate substance is condensed by the twelfth day, but the ends of the tendon are, up to that time, quite distinct from it. By the eighteenth day this substance forms a cord as large as the tendon, and strongly adheres to its extremities; by the twenty-fourth day the intermediate substance is fibrous, its fibres seem continuous with the tendon, it has great power of resistance, and all inflammatory action is dissipated; by the thirtieth to the thirty-fifth day the continuity is perfectly established, but the difference in their appearance is still marked. Bouvier believes this intermediate substance is not formed by extravasated lymph, but by an adaptation or transformation of cellular tissue. This difference is practically unimportant; there is no dispute about the solidity of the union, and the nature of the cicatrix. But the section of the tendon is in most cases a small part of the treatment necessary for club foot: extension by mechanical means must follow, and I know no apparatus more generally available for the purpose, than the following (fig. 1), invented by Stromeyer: but this apparatus is more particularly available to procure the necessary extension in *pes equinus*:—where lateral deviations exist, whether *varus* or *valgus*, then the following modification of Scarpa's apparatus will be found to answer better, by enabling the patient to move about with more facility during the cure (fig. 2).

It is vain for surgeons to object in the present day, that it is dangerous to destroy the continuity of the tendo-achillis. A sufficiently extensive experience proves that it is in every way superior to those

FIG. 1.

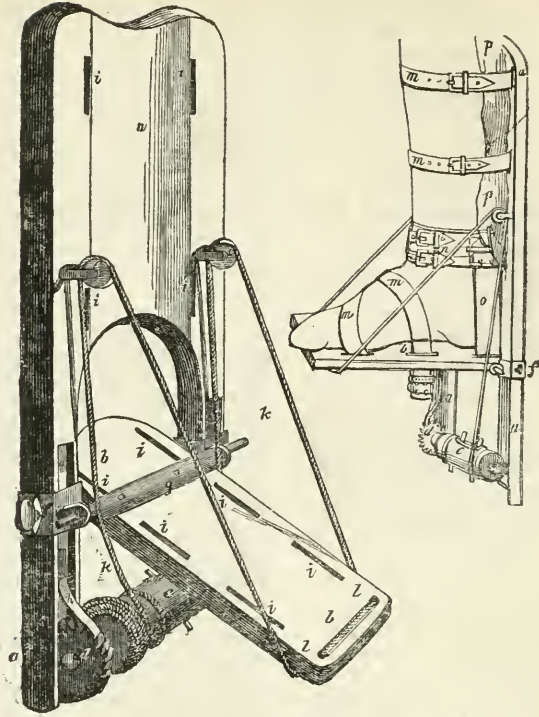
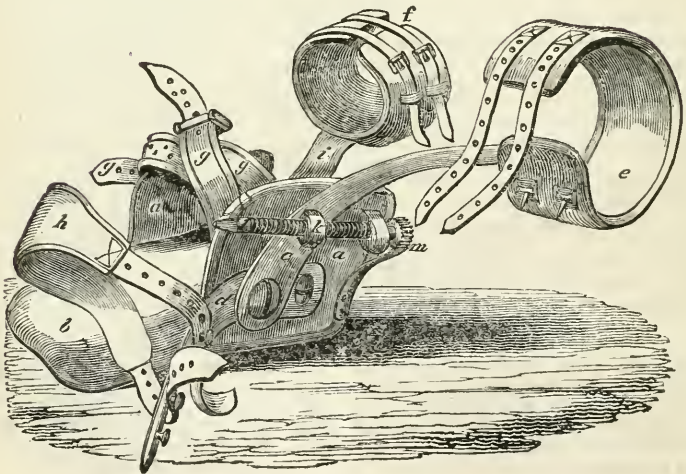


FIG. 2.



fatiguing machines which up to this time have been in common use. But this operation will not succeed if there be any abnormal union between the tarsal bones, or at the ankle-joint, and only partially if there be any deformity in those bones themselves, though a new position may do much to remedy this. Properly used, it is established that it is applicable to all ages and both sexes, since it has been performed with equal success from early infancy to fifty, in women as well as men. A month, or two months, will commonly suffice for a cure, that is, for the patient to walk on the sole of the foot; a longer time will of course be necessary to dissipate the more prominent traces of the deformity. It is true that some of the patients who have been cured by it might have been cured without it, by means of the machines of Scarpa and others, or by enveloping the limb in plaster of Paris: but then this operation is so simple, so free from pain, so easy, and so exempt from danger, its results are so prompt, so complete, that unless there be great objections on the part of the patient, it should be generally substituted for the different apparatuses which were almost exclusively employed up to the present day.

It must not, however, be supposed that because the mechanical has ceased to be the principal method of treatment, it is therefore to be entirely abandoned; its value is little less because it is made to play the part of an auxiliary. It is still an indispensable element, so much so, that the perfection of those apparatuses and the exactitude of their application are in many cases a *sine quâ non* of a perfect cure, and the insufficiency of mechanical means is an occasional source of failure of the operation. The power of mechanical means, associated with section, in the reduction of these deformities, has scarcely any limits, when the osseous surfaces are not continuous, and the moral courage of the patient secures the care of the operator. Still, I do not hold out to you the section of the tendo-achillis as an exclusive method, preferable in all cases to every other. The principle to be kept in view in the application of mechanical means, whether before or after section, rests on the same basis; the centres of motion of the apparatus must correspond to the centres of motion of the displaced joints, and its action must be exactly opposed to the action of the retracted muscles.

RETRACTION OF THE LEG.

The same causes which produce retraction of the foot may produce retraction of the leg, but there are other causes by which the femoro-tibial region may be affected. Retraction in this region may be brought about by disease around the joint, not im-

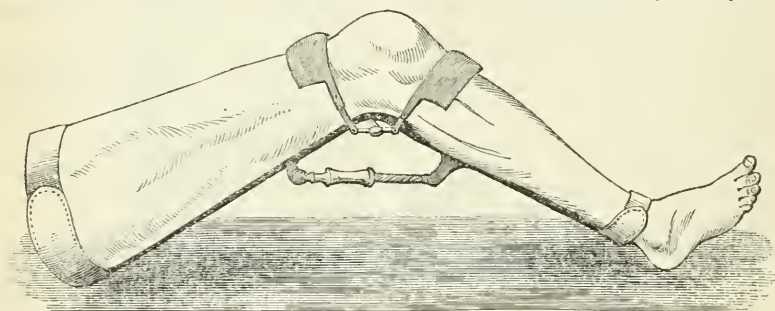
plicating the tissues of the joint itself to any serious extent; by phlegmonous inflammation of the cellular tissue around the joint, by long inaction, the limb being kept in the flexed position, by gout or rheumatism—in fact, by any cause capable of inducing rigidity in the soft parts around the articulation. This rigidity may affect only the tendons destined to move the leg upon the thigh, or it may be accompanied by a similar condition of the ligamentary tissues. In a certain number of cases the contraction has seemed to depend principally or almost entirely on the resistance offered by the tendons of the hamstring muscles, and in these cases the section of one or more of these tendons offers a probable remedy for the disease. But before we resort to operation, we must be satisfied that the ankylosis is extra-capsular, and that the tendons and not the ligaments are principally affected: some persons are of opinion, that even if the ligaments be affected, we ought not to hesitate in attacking them; but before I advise you to apply a cutting instrument to the ligaments about the knee-joint, I should like to support my advice by experience.

Michaelis applied his "partial section" to this disease, but he has not described his mode of operating. Stromeyer, Dieffenbach, Duval, Little, Liston, and no doubt many others, as well as myself, have employed this operation, with varying and more or less complete success. Lutens also employed it, but his operation did not consist of a subcutaneous section; he fairly cut his way out through tendons and integument, making a large wound. In none of the cases published in the *Thèse* of Duval, amounting to seven, did the patients exceed the age of 35; the respective ages being eleven, twelve, six, two, twenty, thirty-five, and twenty: the disease which produced the condition being respectively, phlegmonous inflammation, with abscess around the knee joint; the second, a similar affection, consequent upon local injury; the third, paralysis, consequent on meningitis; the fourth, suppurative inflammation around the joint; the fifth, severe subcutaneous inflammation; the sixth, paralysis; the seventh, suppurative inflammation. Lutens' case was a consequence of inflammatory action, succeeding to contusion. Dr. Little's case had succeeded "to caries and suppuration around the joint." My cases succeeded to rheumatism. In fact, it does not seem to me material what caused the condition; if we find that the hamstring muscles evidently prevent further extension, if we can flex the leg so far as to assure ourselves that true ankylosis does not exist, and there be nothing about the joint, at the time, to contra-indicate operation, we may, ordinary exten-

sion failing, make the section of the hamstring tendons.

The operation is performed in the following manner:—the patient lies on the abdomen, with the thigh extended; the surgeon places himself on the side of the tendon he is about to cut. If he be about to divide the biceps, he makes his puncture on its outside, if the inner tendons, the puncture must be made on their inner side. The knife is passed under the tendon, or between it and the integuments, and when it has arrived on the other side of it an assistant extends the leg so as to make the muscles very tense; the cutting edge is then turned towards the tendon, and, by means of a slight sawing motion, rapidly divides it. Supposing we are operating on the biceps, the operation is now finished, the knife is removed, and the little wound dressed. If the inner hamstring tendons are to be divided, the operation is not so easy; we may have to cut the tendon of the gracilis, the sartorius, the semi-tendinosus, one after another; and this is scarce-

ly more difficult or dangerous than the biceps—the artery, vein, and nerves, are too deep-seated to be in danger. The internal saphena vein and nerve run some risk, but they are easily avoided. Unfortunately, when we have done all this, we may find that the tendon of the membranous requires to be divided. Placed near the posterior surface and inner border of the femur, towards its termination, it is necessary that the instrument, carried between its posterior surface and the tendons we have mentioned, should be so held as to divide the muscle from within outwards and forwards, about an inch above the inner condyle. If we use a blunt-pointed knife there will be little risk of injury to the popliteal vessels and nerves; and if we find that any resisting portion still remains, it must be divided. As soon as the operation is completed, extension may be increased considerably; but I prefer leaving the limb at rest for three days, when extension may be commenced by means of such an instrument as the following, which I employed in my case.



Extension should be slowly made, and the revolutions of the screw should not exceed two daily, and even that, in some cases, may be more than the patient can bear. In most cases it will be found that extension may be carried to its extreme limits within six weeks; sometimes it may be accomplished in half that time; in others, as in one of Duval's cases, many months may be necessary for the purpose. It is not wise to make pressure over the patella, because patients usually complain of it, and it has interfered with the progress of the cure. If there be anchylosis at the knee-joint, the section of these tendons must not, of course, be attempted, nor, indeed, unless the flexion be exempt from luxation—unless, in fact, the infirmity be owing to a retraction of the muscles. In this point of view, flexion of the leg has not been sufficiently studied to enable us to determine whether one of the hamstring tendons more than the other has a tendency to become thus affected. However, this is not a difficulty in the operation, because

the surgeon divides those only which prevent extension of the leg.

WRY NECK, CAPUT OBSTIPUM, OR TORTICOLIS,

may be produced by several causes; but the most common would seem to be a retraction of one or more of the muscles of the neck, usually the sterno-mastoideus. The idea which long existed that wry neck was always the consequence of anchylosis, or some other affection of the spine, has had much influence in the treatment of this affection; despairing of cure, palliatory measures were alone employed. In the present day, we seem to be precipitated into the opposite exaggeration: many practitioners maintain that wry neck is always owing to muscular retraction. A midway course between these discordant opinions is the one you must follow: some cases of wry neck are undoubtedly owing to changes brought about gradually in the relation of the articulating surfaces of certain of the vertebræ of the

neck; others are as certainly owing to exaggerated muscular action alone; and, unfortunately, in a given case, it is difficult to say whether the deformity is owing to one or the other. A cicatrix and chronic deep-seated inflammation of the tissues of the neck may also produce the disease.

What we have said, in speaking of muscular retraction generally, and the destruction of equilibrium, perfectly applies here. On one side a muscle may be paralyzed, on the other, its power may not be increased; yet wry neck may be the consequence: or, on one side, the power is abnormal; on the other, is exaggerated—from this may result wry neck; it may succeed to rheumatism, to neuralgia, to scarlet fever. When caused by rheumatism, and treated early, it is often cured by counter-irritation, local bleeding, or emollients; but when it is of nervous origin, or has succeeded to chronic inflammation, it will not yield to such means. The muscle most commonly contracted is the sterno-cleido mastoid—more particularly its sternal attachment, or, to speak more correctly, the sterno-mastoid, for there can be no question that the functions of the sternal portion are distinct from the clavicular; the first is especially the motor of the head; the other is essentially a muscle of respiration. In wry neck it has been usually the fashion to consider it as dependent upon a retraction of the *sterno-cleido mastoid* muscle, whilst it is the *sterno-mastoid* alone which is usually and primarily affected; it is this portion, therefore, particularly, which it is necessary to attack in treating the affection. Still it is not only the sternal portion of this muscle which must be occasionally attacked; it may be necessary to act upon the clavicular portion, or even the clavicular portion of the trapezius; examples of this are given by Gooch, Sharp, Stromeyer, and others. Out of the thirty seven cases mentioned by Dieffenbach (*Berlin Medic. Zeitung*. 1838, No. 27), in twenty-four the whole muscle was affected, so that in so large a proportion of his cases the section of both attachments of the muscle was necessary.

There are two kinds of deformity to which the term wry neck has been attached; in the one the head is rotated; in the other, it is simply inclined. The rotation occurs from the healthy side, the muscle of that side being hard, projecting, and often painful; spontaneous motion of the head is impossible; in fact, to reduce the head to its proper position, considerable force is necessary, and, as soon as the force is removed, the head returns to its former position. There is a variety of this deformity which has an intermittent character, and, in these cases, there is usually no vertebral disease; there is another in which the

disease is convulsive, or spasmodic, which may be permanent.

Treatment.—These deformities, when dependent upon muscular contraction, and when there is no spinal disease, will sometimes give way to counter-extension continued for some weeks, but the benefit is often only partial—the deformity is only partially removed. I know at this moment two patients, in whom the deformity has succeeded to scarlet fever, and has been treated in every conceivable way short of section, and with very little benefit.

Within a few years, Recamier has proposed a method of treatment, which, in such cases, in his hands, has succeeded very well, and which he terms massage. It consists in making sudden jerks, to the extent the muscle will allow, in the direction to reduce the deformity. In many cases, in a comparatively very short space of time, the muscular contraction is overcome, and the head restored to its proper situation; but the pain attending the practice is often very severe. He has also employed, with considerable success, a method which consists in a sort of shampooing of the affected muscle.

In the treatment of this deformity we find that surgeons long ago resorted to the section of the *sterno-cleido mastoid* muscle. Among the early operators are Isacius Minius, mentioned by Tulpus, (*Observat. Medic.*, 1641; Roonhuysen, (*Heilkuren Nürnberg*, 1674); Meekren, (1688); Blasius, 1677; Sharp, 1739; Cheselden, 1740; Gooch, 1757; but, after his time, the operation was not, so far as I know, resorted to until 1822, by Dupuytren.

In 1822, a case of this deformity was presented to Dupuytren at the Hotel Dieu. "Massage" and topical relaxants were tried without effect, when that celebrated surgeon determined to make a section of the *sterno-cleido-mastoid* muscle, which was in a state of permanent retraction. To avoid an unsightly cicatrix at the internal border of the inferior attachment, he made a small puncture, through which he passed a narrow blunt-pointed bistoury, flat, behind the muscle: when it fairly included the muscle, he turned the cutting-edge towards it; and cut through its fibres, passing towards the skin, without wounding it. The head was quickly restored to its proper position, and there was no drawback. In 1833, Professor Syme performed the operation in a child of six months: the wound was excessively small, the cure immediate and complete. Now, the operation of Dupuytren was chronicled in 1823, in Germany, in Ammon's *Parallele* (Leipzig); near the same time in England, by Mr. Averill, in his *Operative Surgery*; by Froriep, of Weimar, in the same year; by Graefe and Walther in 1824; by Dieffen-

bach in 1830: and yet, in 1838, we find two eminent French surgeons, one of whom did not perform the operation before 1836, the other before 1837, strongly supporting their several claims for inventing the operation.

The operation is now performed in the following manner:—The patient is either laid on a table, or sits in a chair; the head is slightly flexed, so as to admit of the knife more easily passing between the integument and the muscle. The surgeon having placed himself in front or at the side of the patient, with the right hand, if it be the left side, the left if it be the right, he makes, if we follow the plan of Guérin, a puncture at the external border of the sternal attachment of the mastoid muscle, at six or eight lines above the sternum. The instrument is then passed on its flat, immediately before the muscle, until it reaches its internal border; he then turns the edge towards the muscle, and carefully cuts through it, passing towards the deeper seated parts. If it be right to relax the integuments while the knife is gliding beneath the skin, they, as well as the muscle, must be made tense at the moment of section. As the knife is acting upon a dense tissue, the absence of resistance clearly indicates when the section is completed.

For the clavicular portion the puncture must be an inch, or an inch and a half, more externally, and a little nearer the clavicle. As this portion is larger than the other, the bistoury must be carried deeper from without inwards. This tendon, which is as frequently divided from its internal to its external border, as from its cutaneous to its deep surface, is less surrounded than the sternal portion with blood-vessels. If, instead of thus dividing the muscle, commencing by its cutaneous surface, we prefer cutting from its posterior to its cutaneous surface, it will be more convenient, but not indispensable, to puncture the integuments on the inner edge of each tendon; and, when the puncture is made, I think it most prudent to use a blunt-pointed knife, so as to more surely avoid wounding the vessels of this region: afterwards, cutting towards the cutaneous surface by a short sawing motion. As soon as the tendon is cut through, a depression between the extremities is very evident. The head can then, usually, be brought to its proper position. The accidents which have been experienced are not severe; the ecchymosis is often considerable; nervous excitement has been occasionally seen; and, in one case of Guérin's, something like the penetration of air into veins; but the symptoms were not pressing. The little wound is usually soon cicatrised, and suppuration very rarely occurs. But the absence of serious accidents so far, though Dieffenbach himself has operated fifty times, must not put you

off your guard, and the operation must not be lightly undertaken. Its deeper surface is in immediate relation with the subclavian artery and vein, the internal jugular vein, and carotid artery; its superficial surface is traversed by filaments of the cervical plexus, by the external jugular vein. Other veins creep along its inferior extremity.

When the primary obstacle to the reduction of the deformity is destroyed, all our difficulties are not usually removed. The passive retraction of other muscles must be overcome; and this is to be done by mechanical means, which are to be used as soon as the little wound is cicatrised, about the third day. The head and neck having been long maintained in an abnormal position, all the muscles of the neck, not only those of the affected but those of the healthy side, have suffered changes of relation and dimension. These circumstances show evidently, that a mechanical consecutive treatment is almost as indispensable as the surgical operation. The duration of mechanical treatment is variable, depending upon the time and the extent of the deformity. Some days will often be sufficient to make an apparently perfect reduction, but many weeks are often necessary to really complete it.

It is hardly necessary to make a comparison between the present and former modes of treating wry neck. As far as concerned the former operations, either the integument was included in the transverse incision, or a longitudinal incision was made in the course of the fibres of the muscle; a director was then passed under it, and its fibres incised on the director. These two modes differ much in principle and in the mode of execution. In the transverse section, the operation was long, fatiguing, and painful. Similar inconveniences attend the second operation; the obstacles to raising the muscle upon the director, and to pass the director through the opening, are considerable. The immediate results of these two operations are relative to the time and the difficulty of the operation, the pain which is suffered, and the extent of the wound. Considerable inflammatory action has been developed, has extended to the throat and surrounding parts; the cicatrix is unsightly; it interferes with the employment of mechanical means, causes the muscles to adhere to the skin, and thus seriously interferes with extension. As to the definitive results they are not more advantageous: the reduction is incomplete; a certain rotation and inclination of the head remains, because proper mechanical means could not be promptly applied. This proves how indispensable is the consecutive mechanical treatment, and shows very clearly the advantages of the operation at present employed.

Other muscles of the neck have been cut

through for the purpose of relieving this deformity. In a case in which section of the sterno-cleido-mastoid was insufficient to admit of the removal of the deformity, Stromeyer carried his knife under the anterior edge of the trapezius. The platysma myoides underwent similar retraction in a case described by Gooch; he incised it transversely, and cured his patient. The only organ about which any risk is run in that operation is the external jugular vein. Where this kind of retraction is a consequence of a burn, this incision will be unavailing, even when associated with mechanical means.

STRABISMUS.

The principle of tenotomy has been proposed to be applied to the tendon of the biceps, in obstinate cases of flexion of the elbow joint; and has actually been applied in many cases, by Dieffenbach and others, to the cure of strabismus, with, it is said, complete success, and but trifling present inconvenience. It is assumed, that the eye is drawn inwards or outwards by exaggerated action, or retraction of the external or internal rectus muscle; and a section of the affected muscle is the remedy. The operation is performed in the following manner:—the eye-lids are fixed as in an operation for cataract; the conjunctiva is grasped by a hook close to the point to be punctured, or a small hook is passed through the sclerotic, so as to keep the eye fixed; these hooks are given to assistants. The operator then proceeds to cut through the conjunctiva, making an incision about five lines long, and about three from the cornea; he then carefully dissects down until he comes upon the tendon of the muscle, follows it back a short distance, passes under it a curved scissors, makes the section, and the eye is immediately redressed. So far the cases of success preponderate; and the only inconvenience has been ecchymosis of the conjunctiva: but I cannot help thinking, that already the operation has been undertaken without sufficient caution. How are we to determine, *a priori*, that the oblique muscle is not the seat of mischief, and that some disease, of a chronic character, within the brain, may have occasioned the strabismus. Still it is a very ingenious operation; and, if well performed, does not seem likely to produce great local mischief, even though it did not succeed in curing the deformity.

RETRACTION OF THE FINGERS.

We are occasionally called upon to treat deformities of the fingers dependent upon retraction of certain of the flexor or extensor tendons, or of the palmar fascia; but a case was brought under my notice, not long since, where there was a lateral de-

formity of the fingers, occasioned, as it would appear, by a habit, not uncommon in boys, of getting two pieces of slate between the fingers, and bringing them suddenly together, so as to make a loud noise. These cases are, I apprehend, rare; but permanent flexion of the fingers is not at all rare.

The deformities produced by cicatrices succeeding to burns are frequently seen, and, in many cases, they are owing to incomplete extension during the work of cicatrization: the deformity may be so excessive that the palmar surface of the finger may be united to the palm of the hand. Before we attempt to relieve them, we must first ascertain whether the joints or tendons are implicated; if they be not, we proceed to set the finger free by a careful dissection; but we must also remove the tissue of the cicatrix, otherwise the evil will be renewed. I saw the other day, at the Bristol Infirmary, another plan, which had succeeded, in as far as one finger was concerned. A seton was inserted through the cicatrix, and gradually cut its way out; but I think there can be no question that the operation of excision of the cicatrix is the preferable mode of proceeding. In either case care must be taken not to injure the tendons; and the hand should be placed on a finger-splint, so as to keep up the separation during the healing process, which is often long.

Every now and then we see cases where a permanent and incurable flexion of the finger may succeed to the section of the extensor tendon, or to any wound or injury which may equally destroy it. It may succeed to paralysis of the extensors; we also see it follow injuries which have for a time prevented the motion of one or more fingers. In many of these cases we can easily make a forced extension, and we may maintain them in this position; but it is very difficult, and, in many cases, impossible, to maintain, between the flexors and extensors, the necessary equilibrium.

A more frequent cause of permanent flexion is a disease of the flexor tendons themselves. A relation of my own received a slug wound in the forearm, which more or less completely cut away a portion of the flexors, and in this case there is permanent flexion or contraction of the little and ring fingers. I have known an incision made for the cure of whitlow to be followed by the same condition: in that case the sheath of the tendon was opened: the puncture of a nerve in bleeding has been followed by a similar state. In the Archives, for June, 1838, a case is mentioned where complete section of the wounded nerve immediately cured the disease.

But permanent retraction of the fin-

gers is, in the great majority of cases, dependent upon another cause, or causes, about the nature of which much difference of opinion exists. Although the ancients described the affection under the term *crispatura tendinum*, it is to Sir A. Cooper, Dupuytren, and Goyrand, that we owe all that is accurately known on this subject. The disease has a particular predilection for the three last fingers, but it more especially affects the ring finger, rarely attacking the other two until it has become pretty advanced in that. With the exception of a single case, dissected by Goyrand, I know of no other in which the thumb was affected. Dupuytren, in speaking of the disease, which certainly most commonly affects persons whose occupations oblige them to keep the hand very generally flexed, such as hackney coachmen, says, the first phalanx is flexed upon the corresponding metacarpal bone; the second is flexed upon the first; but the third very unfrequently participates in the disease. In the palmar surface of the fingers, we find projecting bands, which set out from the palm, and fix themselves to the anterior surface of the first two phalanges, and become very tense when extension is attempted; at the same time the tension is communicated to the palmar fascia. The skin presents, at the level of the roots of the fingers, semi-lunar folds, with their convexities directed superiorly.

Many different opinions exist as to the cause of this condition, some attributing it to the retraction of the tendons. Boyer said the cause was unknown; but still, in considering attentively its phenomena, and the slow and gradual manner in which it is developed, believed it depended less on a spasmodic contraction of the flexors than a species of drying rigidity, or hardening of the tendon and the skin. Sir A. Cooper attributed the disease either to a retraction of the flexor tendons and their sheaths, or to that of the palmar fascia, as a consequence of certain kinds of labour with the hand. Dupuytren dissected the hand of a person in whom the affection existed, and believed it was a consequence of contraction of the palmar aponeurosis, and the traction of the small bands into which it divides inferiorly, and which proceeds to be attached to the sides of the first phalanges. He cut through these bands, and the fingers immediately resumed their natural position. Upon Dupuytren's shewing, all that was necessary for the cure of this affection was to cut through these bands of aponeurotic fibres. In some cases this plan has succeeded, in others it has failed, and therefore we must regard this opinion as too exclusive. Goyrand shewed upon dissected specimens that it is due, not to retraction of the palmar fascia, but

to fibrous cords, which he conceives of new formation, some of which extend from the palmar aponeurosis to the sheaths of the tendons and the edges of the phalanges, whilst others extend from a point of this sheath to a point in front of the phalangeal articulations, others set out from a superior phalanx, to attach themselves to the corresponding portion of the adjoining phalanx. The existence of these bands certainly explains the necessity which has been found for making several incisions along the anterior surface of the finger.

The disease is sometimes congenital and even hereditary. In 1832, Dupuytren operated upon a child of six, who had congenital retraction, and whose grandmother had also congenital retraction; but usually, besides these predisposing causes, there are direct or determining causes. Among these are arthritic affections, sprains, wounds—in fact, all things which oblige the patient to keep for a certain time the fingers flexed. In these cases the fibro-cellular bands, which up to that time were long enough to admit of extension, are shortened, and ultimately complete extension is prevented. The more these cords project the more they are irritated by pressure, and the more they are developed, and the extending power can no longer effectually struggle against it. In the state of repose the fingers will always be found so flexed as to relax these cords, and thus the deformity increases. The retraction in these cases is very powerful. Dupuytren, in a case, sought to cure the disease by overcoming the flexion by means of weights appended to the fingers; fifty-five pounds were borne without materially lessening the flexion. In a single case he demonstrated by dissection that the palmar aponeurosis was retracted; he shewed that the folds of the skin were effaced, by cutting through the aponeurosis; that when the skin was separated from the aponeurosis the folds no longer existed; that the section of the flexor muscles and their tendons did not permit the deformity to be reduced. The objections made to this exclusive view are, that the aponeurotic prolongations proceed only to the base of the first phalanx, that Dupuytren himself was obliged to make incisions at the level of the first phalanx, and at the articulation of the first with the second. An explanation of these facts was given by Goyraud; and there can be no doubt that cases occur in which there is no disease of the palmar fascia. It is difficult to understand why, in these cases, the ring finger always suffers. The only probable explanation is, that the principle exists in the palm of the hand, in the seat of flexion; the ring finger is worse off as to extension than the others; the thumb, the indicator,

and the little finger, all have proper extensors: the middle finger has a strong one belonging to the common fasciculus, whilst the annular one has an extremely small tendon proceeding from a small muscular bundle; thus its most constant state is that of flexion, and its individual movements are very feeble and difficult. Persons who play upon certain instruments know that difficult passages are often ill executed with this finger. In almost all manual exercises, it is the two first fingers and the thumb which are used; the ring finger is flexed.

Treatment.—In the treatment of these affections, machines, emollients, stimulants, as well as section of the tendons, have been vainly employed. At present we are sensible that the only probable means of cure is section of these subcutaneous bands. Dupuytren's method was to make transverse incisions, ten lines long, at the most projecting part of each band—that is, usually at the level of the metacarpo-phalangeal articulation of each retracted finger, occasionally a little higher or lower. After the incision of the skin, the band is made as tense as possible by extending the finger, and then completely dividing it. If that be insufficient, a new incision must be made at a certain distance from the first. Each retracted finger requires a special section. Goyraud recommended to incise the skin longitudinally upon each band, previously made quite tense, to separate the lips of the incision, to detach them by dissection from the fibrous parts, which are then to be fairly divided. Sir Astley Cooper, long before either, recommended that a narrow knife should be passed under the obstacle to extension, and that it should be divided without dividing the skin which covers it. In all cases the finger should be placed in complete extension. If it be a question of a single longitudinal band, Sir A. Cooper's method is unquestionably the best; but, unfortunately, we frequently have bands which send prolongations, and are adherent to the integuments. In appearance Goyraud's method seems faultless; it allows of union by first intention. The cicatrix is linear, and it runs no risk of being destroyed by extension, as is the case when the incision of the skin is transverse. Dupuytren's method has been followed by sub-aponeurotic inflammation of the hand, diffuse suppuration, exfoliation of tendons, and so on; these effects, however, may often be prevented by persevering in the use of cold applications and good position.

BURSÆ MUCOSÆ.

More or less directly connected with the tendinous system are certain mucons

bursæ; and this appears the fitting place for considering the injuries and diseases to which they are subject. We must consider bursæ mucosæ under two points of view, dependent on their situation and connections. We will consider first those which have been scarcely spoken of by anatomists—the subcutaneous. These are found at almost all points where the skin covers parts which move much, but most constantly between the skin and the patella, the trochanter major, the posterior part of the olecranon, the acromion, the front of the thyroid cartilage, sometimes behind the angle of the jaw, and between the skin and the extension surfaces of the metacarpo and metatarso-phalangean articulations, and also that of the first phalanges with the second: but these are most commonly nearly related to the tendons; they exist at the moment of birth, and they increase in size in proportion to the exercise of the parts. Beclard remarked that the acromial one was largely developed in porters; that over the patella is often large in housemaids, and those who pray much.

Wounds.—Wounds of these sacs do not usually give rise to serious accidents, and usually soon heal. When they are *contused* the case is different; indeed, such accidents seem to be the foundation of many of the alterations of which these organs become the seat, and which may be found in the writings of Gooch, Bell, Monro, Cowper, Koch, Herwig, Velpeau, and others. These injuries may cause an effusion of blood, which happens often without pain, and does not attract the patient's attention until the motion of the limb becomes constrained; sometimes it is absorbed, at others it remains apparently stationary, constituting a tumor which, after many years, acquires considerable size. If we open them soon after the injury, we find clots of blood; if it have occurred some time, the capsule is sometimes hard and thick, formed of concentric layers analogous to those of aneurismal tumors. The contained matter is sometimes grey, yellowish, reddish, or blackish; sometimes liquid, at others grumous; sometimes fibrinous. Usually a certain portion of the matter has a synovia-like appearance. Sir B. Brodie has shewn that the *fibrinous flocculi*, which he terms coagulable lymph, whether free and floating, or adherent, often undergo a change which reduces them to the condition of fibrocartilage. Such he believes to be the origin of those seed-like bodies which are occasionally found in considerable number in subcutaneous bursæ; also in those of the tendons, and occasionally in articulations. A species of confirmation of this opinion is furnished by the fact, that the patient usually states that a blow had

been received on the part. When these bodies have acquired a cartilaginous appearance, the fluid in which they float becomes often more like synovia, sometimes glutinous, like the vitreous humour.

Dropsy of subcutaneous bursæ is not unfrequently seen over the patella of persons much given to kneel, and interferes with motion at the part; so it does when seated over the olecranon, it prevents flexion of the forearm; it may occur in other situations, but usually it is less abundant elsewhere than over the patella. It results often from contusion. Camper believed its frequency in front of the knee of the horse resulted from his lying commonly, like other ruminating animals, so that the shoes of the hind feet rub constantly this part of the fore-leg. Though most of these collections may be caused by traumatic agency, yet it would appear that they may be produced by internal causes; and the circumstances vary according to the cause. Thus when produced by external causes, there is a fixed though slight pain from the commencement. The extravasation is not usually manifest for some time after the injury; its increase is slow, and sometimes it remains stationary. On the contrary, when it proceeds from internal causes, it is sometimes suddenly developed, rapidly increases, but rarely acquires great size, and occasionally disappears with as much rapidity as it has been developed. As an example of this I may refer to a case mentioned by Koch, who, in a gouty subject, saw the bursæ over the patella suddenly enlarged; it as suddenly disappeared, and seemed transferred to the knee-joint; from thence it proceeded into that of the popliteus muscle. Cheston mentions a similar case. Asselini mentions a curious case where the affection alternated with abundant glairy vomiting. When the tumor over the patella existed, the health was good; when it disappeared the patient had nausea and vomiting, until an albuminous matter was thrown up. Monro speaks of a case which he believed to be dependent on scrofula.

Treatment.—The treatment of these tumors varies with the causes. When the cause is external, topical applications will often succeed, more particularly when they are rubefacients. Sometimes soap-plaster will suffice; frictions and bandages will often succeed; so will mercurial plaster, and the iodides: when they resist simple means, a succession of blisters will often get rid of them. Of course, we are speaking of the treatment when the disease is not acute. If, in spite of these topical applications, the tumor, instead of diminishing, increases in size, it may be necessary to puncture. When the disease is recent, a single puncture, or incision, at the most depending

point, will usually suffice for its evacuation; and the parietes should be maintained in contact with a bandage. A radical cure very commonly results in a comparatively short time. When the tumor is old, and the parietes thick, it may be necessary to extend the incision through greater space, and fill up the cavity with lint, so as to excite inflammation and adhesion of the parietes. Still they do not always yield even to this method, and it has been proposed to effect a radical cure by dissecting them out. When the tumor is small, they are easily dissected away, with or without previously discharging their contents. When the integuments covering them are altered, the method of Chopart may be employed: open, at the depending part, largely enough to evacuate the contained matter; the incision is then extended circularly, so as to remove the skin with the sac which is connected with it. A wound is thus made, the centre of which is formed by the portion of cyst corresponding to the base of the tumor; this ultimately is thrown off, leaving, under, a dense fibrous tissue. Simple puncture has been commonly employed for simple hygroma: but it often fails; and Monro and Charles Bell advise a seton to be introduced for three or four days. Others recommend, after evacuating, to inject stimulating liquids. In this class we need have no apprehension in doing so; but in those cases to which I specially referred, whether they communicate with those of tendons or not, it is not wise to employ it. Asselini opens with a bistoury rather than a trocar, because the former may make a larger opening, so as to discharge those fibro-cartilaginous bodies of which we have spoken; or, if desirable, it enables him to apply caustic. He has been accustomed to use with success the acid nitrate of mercury. Sometimes the irritation of a probe or the handle of a scalpel is sufficient.

Where the disease seems to be produced by constitutional causes, a clue to treatment may be given. These tumors may become the seat of *inflammation and abscess*. The many causes which we have considered as capable of producing effusion into these sacs may occasion inflammation and abscess. The usual result is such as we observe in serous cavities—the ordinary secretion may be augmented, it may become changed; milky and fibrinous concretions may be formed; it may end in purulent secretion, the cavity is changed into an abscess—these are the consequences of acute inflammation. When chronic, the parietes of the cyst thicken sometimes to the extent of half an inch; in other cases, though they have existed long, no perceptible change of structure happens. Ordinarily, they do not occasion great constitutional disturb-

ance, though I have known great constitutional mischief excited by such disease, between the latissimus dorsi and the angle of the scapula, where the tumor had acquired the size of a child's head: in that case, and in a similar one given by Brodie, death was the consequence.

Although generally chronic, these tumors are now and then acute. There is then a dull, deep-seated pain; the inflammation may extend to neighbouring parts, the skin over them is red, and a fluctuation may be distinguished. This is not easily detected when the tumor is chronic, because the thickening of the parietes gives it the character of a hard compact mass. The contained pus usually finds its way to the surface; but Brodie has seen it burst the lateral walls, and become diffused through the neighbouring tissue, as in a case of diffuse phlegmonous inflammation, and this termination has been oftenest seen over the patella. So long as such tumors remain painful, leeches may be applied, alternated with cold lotions. The cure may be only partial; the disease becoming chronic, the fluid may not be absorbed, and an incision may be necessary for its evacuation, and pressure may be afterwards applied; but this will occasionally fail, and fluid may be discharged for weeks or months. When the abscess is large, Brodie advises a simple puncture to be made, lest serious symptoms may follow. However, he mentions two cases, in one of which the seton, and in the other puncture was employed, which do not favour this opinion: the result was fatal in both.

TENDINOUS BURSÆ.

Those bursæ which form as it were lubricating sheaths for the tendons, and which have been so well described by Jancke, Fourcroy, Monro, Beclard, and Koch, require a separate consideration from those which are subcutaneous. Some of them are confounded either externally with the subcutaneous bursæ, or internally with the synovial capsules of articulations. That which is behind the tendon of the triceps cruralis is often connected with the capsule of the knee-joint: that of the popliteus, it is stated by Fourcroy, always communicates with the same articulation. It is evident that there is a strong analogy between these bursæ and the articular capsules; the membrane lining them is similar, the one and the other are shut sacs, the one and the other secrete a synovial fluid, their connexions are often very intimate, and disease in the one is not unfrequently communicated to the other.

Their adhesion with tendons and bones exposes them to a variety of injuries, consequent upon contusions, fractures, strains, and luxations, and the fluid they contain

is liable to certain alterations. They may be wounded by contusing or sharp bodies, they may be lacerated by the end of a fractured bone, or the violent distension of an articulation. However produced, the injury may be generally detected by the escape of a certain quantity of their fluid with the blood, as well as by the difficulty and pain which are experienced in attempting to move the limb. If the bursa be large, the irritation caused by the wound increases the secretion, and if the capsule be directly connected with a joint it may also become affected. In small bursæ, we often can only judge of their being injured by the situation of the wound. Sometimes the inflammation follows soon after the wound, usually, however, not until some days have elapsed. Monro attributed the accidents to the ingress of air, but in the present day we do not subscribe to this opinion. It is clearly much less to the presence of air, which is not of itself an irritant, than to the motion at the part, that the consecutive accidents should be referred. A little reflection upon the connection of these organs with the tendons will shew the difficulty of preserving immobility: the fatal symptoms which are sometimes observed, as a consequence of opening ganglia of the wrist and hand, support this opinion.

To prevent the development of too much inflammation is therefore the great principle to be kept in view in the treatment of these wounds; all motion at the part should be as far as possible prevented, and if a too intense inflammatory action should be set up, it should be very energetically treated. If we prevent the development of inflammation, these wounds unite soon; but most frequently the capsule adheres to the tendons, and motion is for some time interfered with. If, however, the inflammation should be extended either to a joint or its capsule, much mischief may be the consequence, and at best a considerable loss of motion.

Contusion may be attended with results similar to those we have described in speaking of subcutaneous bursæ; but often the consequences of contusion are serious, principally from their seat and connexions.

Inflammation and Tumor.—What has been said of wounds and contusions of these bursæ has given an idea of the consequences of traumatic inflammation of these organs; they may become inflamed under the influence of internal causes. Sidren has seen them to be violently affected upon the sudden appearance of erysipelas. Koch has seen it follow compression applied for other purposes; he has also seen the knee bursa affected monthly for a considerable time in a young woman who menstruated with difficulty. Lind has seen it often in

the second period of scorbutus. Fourcroy says it is frequent in gout and rheumatism. Brodie thinks it may proceed from an immoderate use of mercury.

The symptoms presented are oblong and more or less large tumor, with a dull pain and diffused heat at the part; the connexions explain the great increase of pain upon motion, and this pain is greater upon extension than flexion, according as the particular capsule is affected. If the tumor be superficial, the skin which covers it is often red and hot, but very frequently it is unchanged; this inflammation much more commonly attacks the bursæ of the knee, the wrist, and the tarsus, than those of other parts. Occasionally they are confounded with disease of the joint, but their seat should prevent that: when the bursa is deep seated, the difficulty of diagnosis is often great, especially when near a joint; it is still further increased when the bursa communicates with a joint.

The disease may be acute or chronic: in the first it is very serious, and often ends in abscess; the adhesions are considerable, the cavity often obliterated, and motion more or less completely abolished. When chronic, similar effects may be produced; they may degenerate under the influence of a seton, for instance, into a fungus or carcinomatous tumor (S. Cooper). According to Koch, the fluid they contain may be transformed into a yellowish or whitish cheesy matter: tumors of this kind, after giving more or less violent pain for some time, ulcerate, and the cure can only be obtained by extirpation with a cutting instrument. Fourcroy thought that the rigidity of a limb after repeated attacks of gout or rheumatism, might depend upon concretions deposited in the synovial capsules of tendons.

These changes, and their connexions with articular capsules, show very clearly a reason why they have been mistaken for white swelling in the joints with which they are connected. This error should not happen if the disease have been seen at an early period; independently of calcareous tubercular and cancerous products, which may be developed in bursæ, they may also contain fibro-cartilaginous bodies, such as I have before described: these are usually not very painful.

When seated at the wrist they are usually divided into two portions, being bound down by the annular ligament; if we compress either we enlarge the other. It is necessary to be careful not to confound these tumors with certain others developed in the neighbourhood of joints. They depend upon the accumulation of synovia, by which the membrane is projected between the ligaments; it is usually easy to distinguish them by their complete dis-

appearance under pressure. In the Edinburgh Medical and Surgical Journal for 1821, is a case in which a ganglion appeared in the course of the radial artery, and was mistaken for aneurism, but fortunately the mistake was soon discovered. I have already stated that usually those tumors were of slow growth, that often they do not acquire great size, nor interfere materially with the functions of the part, that when they are seated on parts subject to constant irritation, they may be inconvenient; if they become large they may be painful, and interfere with motion at the part. They may remain stationary for years; patients have had them for twenty or thirty years without undergoing any manifest change. It is very rarely that they retrograde, or are spontaneously cured.

Treatment.—Many means of treating these tumors have been employed. Solutions of acetate of lead, sulphate of zinc, and other astringents, as well as oil of origanum, have been used, in the hope of dispersing them, and occasionally with success; but it is very rarely that they completely cure though they may diminish the tumor. Alkalines, mercurial frictions, and slight compression, have been used with occasional success, but have often failed. Compression is sometimes made with the thumb, sometimes with a piece of lead, a copper or silver coin, associated or not with friction; friction, however, must not be carried so far as to occasion much irritation at the part, for when much irritated they have been known to degenerate into fungous growths. Pressure violently and instantaneously made, is sometimes employed; for instance, a penny is placed upon the tumor, and smartly struck, or instead of that it is struck with a book, or any other flat body. If it give way, a slight noise is heard, the cyst is emptied, and the contents are diffused through the surrounding tissues, and afterwards absorbed; a certain quantity of inflammation is developed in the parietes of the cyst, it is obliterated, and a radical cure is thus obtained. These tumors are, however, sometimes reproduced, and a new operation is necessary. The seton has been passed through these tumors for the purpose of evacuating the fluid and exciting inflammation in the parietes, but this method of treatment is not without danger. I have known a case in which a tumor at the wrist was thus treated, the inflammation it excited extended to the carpal bones, and amputation was necessary. In the Journal de Médecine, vol. 5, is a case where a carcinomatous tumor succeeded to the irritation of the seton. If they resist these different methods of treatment, and become painful or inconvenient,

they should, if possible, be extracted. For this purpose, a longitudinal or crucial incision may be made over them, and the cyst dissected out. You must take care not to open it, otherwise the dissection is difficult: some persons are content to cut away the anterior walls only. If the tumor be not very large we may endeavour to bring the parts together and heal by first intention, but if it be large, it may be better to introduce lint into the wound, and heal by granulations. When seated in the palm of the hand, unless very inconvenient, they should be left alone. Whether opened or incised, very formidable and painful accidents may be the consequence. Still it is not always so. Warner describes two such cases, in which he completed the extirpation: both did well. Gooch describes a similar case, and many others are recorded. Still serious accidents are so frequent, even when a case has ultimately done well, that the reasons for acting should be very pressing. It is also recommended by some surgeons to puncture and empty them, and afterwards to introduce an irritating fluid, capable of exciting inflammation and adhesion. In some cases repeated blistering will succeed, but will often fail; still, in most cases it is worth a trial.

CLINICAL LECTURES,

Delivered in St. Vincent's Hospital,

By J. M. FERRALL, Esq. M.R.I.A.

First Medical Adviser in Ordinary to the Hospital.

Mammary Abscess—Numerous Fistulæ—Circular compression—Cure—Necrosis of four-fifths of the clavicle—Separation of the bone without injury to the limb—Fungus of the antrum—Lymphatic contamination—No visceral taint.

GENTLEMEN,—Amongst the cases discharged this week, the first to which I shall briefly direct your attention is that of a young woman in Joseph's Ward, with enormous enlargement of the breast, and numerous fistulous openings—hectic fever, and great wasting of the frame. A patient in the last stage of phthisis could hardly present a more attenuated appearance than this young person, when entered for admission. The case is one of practical interest, because, although the treatment of mammary abscess generally is discussed in every systematic work, yet this particular condition of the breast, although of frequent occurrence, has not usually been made the subject of special consideration.

Deep-seated Mammary Abscess, with numerous Fistulæ—Cure by circular compression. (Reported by Mr. W. M'Mahon.)

Fanny Fanell, aged 20 years, admitted into Joseph's Ward with the following symptoms:—

The right mamma is enlarged to three or four times the size of the healthy one. It is irregular in shape, very heavy, and presents a number of fistulous openings on every side, freely discharging purulent matter. The integuments immediately surrounding each orifice are marked by a dusky purple tinge, and are depressed below the level of the surrounding skin. The whole breast is exquisitely painful to the touch, and is often the seat of distressing uneasiness and sense of weight.

She is greatly emaciated, very pale, and complains of excessive weakness. Bowels constipated; tongue coated slightly, but moist; pulse 110, small, and feeble. On waking from sleep, she finds herself bathed in perspiration. No cough; no evidence of pulmonary disease.

I may here interrupt the narrative, to remind you of my observation at the time, that here was a case for the treatment of which no rule of practice was established to which I could invariably subscribe. If you consult the systematic works of character, you will be disappointed if you expect to find this case provided for. Mr. Hey is the only author who seems to direct attention to this particular state, but I believe you will meet few ladies who will submit to the operation he describes. In hospital practice, where the patient has great confidence in your humanity, she will submit with extraordinary patience to the process, and under those circumstances I have performed with success, although the hewing up of a diseased breast in all directions is any thing but an object to view with complacency. I could not help feeling, besides, that erysipelas was very likely to succeed to the infliction of numerous wounds, especially in a constitution already reduced below the standard of health. After describing accurately the condition of the mamma which succeeds to deep-seated abscess with various openings, Mr. Hey says, the cure cannot be accomplished unless the course of the sinuses be traced, and each laid open completely, however numerous they may be, or tortuous in their windings through the organ. He insists on this operation as indispensable, and even admits that, by doing it as it should be done, the breast may be "divided into several pieces." The extent to which the organ was incised may be inferred from his saying that, when any portion of the mamma was thus insulated, and rendered pendulous, his remedy was, to "remove it altogether."

This was bold practice, you will say; but, from the character, experience, and singular ability of Mr. Hey, you may be satisfied that it was not lightly undertaken or recommended. If you look into other authors, as Pearson, James, Boyer, Sabatier, &c., you will find that they consider the question of opening the abscess or not, but do not seem to contemplate the degeneration of the openings into intractable fistulæ, wearing out the constitution of the individual. M. Dugès, in his elaborate and excellent memoir in the *Dictionnaire*, is equally unsatisfactory on this point. He discusses all varieties of mastitis with great precision, but not this peculiar condition which so often succeeds to the abscess if deep-seated. Sir Astley Cooper's valuable advice on the treatment of sinuous ulcers is more in point. He recommends (without particular reference to the mammary fistulæ,) injections and pressure. The material of the injection which he seems to prefer is either port wine or tincture of lytta. It is obvious that we could not hope to make any injection follow the tortuous course of so many fistulæ passing in all and even opposite directions through the substance of the breast: Pressure applied in the ordinary way, or antero-posterior pressure, although of great service in sinuous ulcers of less extent and number, had invariably disappointed me when tried in analogous cases to the present. The pressure, however dexterously applied, had the effect of forcing together the parietes of the fistulous canals at some point of their course anterior to their extreme or further end, and thus prevent the exit of the discharge which was secreted by this distant portion of the pyogenic membrane. The consequence was, that a new dépôt was formed, and a fresh attack of feverishness was set up, until it made its way in some direction or other to the surface.

It occurred to me, however, that pressure could be made available, if, by some modification in the mode of applying it, we could imitate the circular compression which so often succeeds when employed on the limbs; and the remarkable prominence of the mamma seemed to favour our design. With this view we proceeded as detailed in the next day's report.

Jan. 16th.—A probe is readily passed to a considerable depth on some of the fistulæ by accommodating the curve of the instrument to the direction of the canals. The orifices are covered with simple dressing or lint. A series of compresses, made of fine tow, are arranged so as to make pressure on the circumference of the breast or round its base; the anterior portion is left free for the discharge. A double-headed

roller is made to pass over the compresses from beneath; the ends are brought up and crossed over to the shoulders, thence across the back, and round again to the breast as before. The circles were repeated several times, so as to make firm pressure, and acting as a sling to support the breast at the same time. She experienced considerable comfort from the support.

The constitutional treatment consists of animal food, and a little wine. Decoction of bark, with aromatic sulphuric acid, three times daily, aperient medicine being previously given.

It would be useless to read the daily reports in this case. An improvement was evident on the second day, both in the bulk of the breast and in the quantity of the discharge, which was very much lessened.

Jan. 21st.—Several of the ulcers are healed; a small spot, about the size of the top of the finger, on the upper surface of the breast, is red, soft, and painful; about a drachm of healthy pus escaped on puncture; the bandage is re-applied as before.

Jan. 26th.—Her general health is remarkably improved. The night sweats have ceased altogether, and she begins to gain flesh. There is very little discharge from the breast, which is greatly diminished in size.

Feb. 5th.—She is gaining strength and colour, sleeps soundly, and has an excellent appetite. The state of the breast is satisfactory. There are only two openings unhealed; and the quantity of discharge is trifling. The pressure is most comfortable to her. The size of the breast is nearly that of the other.

Feb. 21st.—There has been no discharge for several days. The breast is now as small as the other, but is remarkably firm and solid. Her health and flesh are perfectly restored. Discharged.

One great recommendation possessed by this mode of treatment, compared with Mr. Hey's operation, is its entire freedom from pain or danger. The moment the circular compression was effected, the patient declared she felt comfortable, and was relieved from many of the uneasy sensations she endured before. The mamma was effectually suspended and compressed at the same time, and, the anterior surface of the part being exempted, a free exit was allowed to the discharge. As the breast diminished in size, the bandage was made to advance further forward, until its most anterior portion engaged.

The great solidity which remained after the healing of the ulcers, was the inevitable consequence of the extensive hypertrophy and thickening of the cellular tissue, which was the seat as well of the original inflam-

mation as of the purulent deposits, which succeeded each other, until the entire organ was occupied.

The swelling and prominence of the breast was a favourable circumstance in the present case; but I should think the mode of employing pressure, adopted here, could be used in any case requiring it; for the part could be drawn gently forwards by an assistant while the compresses were being adjusted, so as to act only on the circumference or base of the organ. This would seem to be essential to its success; for it is plain, that any pressure made in front would only have the effect of opposing the free discharge from the parts behind.

The next case, amongst those discharged, is one which shows how little constitutional disturbance may be occasioned by the death and exfoliation of a large portion of a bone, possessing such important anatomical relations as the clavicle.

Necrosis of the clavicle—Exfoliation of four-fifths of the bone at its acromial end, without deformity. (Reported by Mr. Howel Seriven.)

Margaret Day, ætat. 15, was admitted into Joseph's Ward with the following symptoms: an oblong ulcer occupied the centre and acromial extremity of the line of the clavicle; about an inch of this end of the bone projected at an angle through this breach, and the remainder of the ulcer presented an unhealthy surface of large pale granulations.

The projecting bone exhibits three or four irregular openings, through which a probe passes into the substance of the clavicle, and, moving freely about, shows the extent to which the cancellous structure has been removed by absorption.

There is very little pain in the part, except when it is examined, or accidentally hurt. The girl's health is good, and the motions of the shoulder are scarcely impeded. There is very little tendency in the scapula to fall forwards, although deprived of its support.

The limb is supported by the clavicle apparatus, which keeps the shoulder from inclining forwards, and the ulcer is dressed with lint.

The history of this case is briefly this:—Two months ago, after a slight hurt in the part, she felt pain, and in a few days swelling and redness appeared. She found great difficulty in using the arm, but was not prevented from going about as usual. The pain increased, and at length a discharge took place; the opening became larger; and the bone was observed to make its appearance three weeks before admission. She thinks it is coming more forward every day.

From this period to that of leaving the hospital (four weeks), the progress was gradual, and accompanied by no remarkable event. The bone was moved occasionally by the hand, in order to favour its separation. The shoulder was supported by the apparatus: Her general health scarcely required attention.

At length the bone was found lying detached under the dressing, and was examined carefully. The sequestrum was four inches and a half in length. It included the acromial articulating extremity entire, denuded of its cartilage, but otherwise unaltered. The articulating surface was as perfect as that of any dried clavicle from which the cartilage merely had been removed. Internal to this point, or nearer the mesial line, the openings before mentioned were observed. Farther on, the bone was smooth, hard, and compact, externally. At the inner extremity of the fragment an irregular worm-eaten appearance was remarked, and the cancellous structure was here completely removed, leaving merely the shell of the bone,

You will remember, gentlemen, that I explained to you, in the first instance, the grounds on which we were justified in leaving the separation of this necrosed bone to the efforts of nature. In the first place, no constitutional disturbance existed; and as the girl had no pressing necessity for severe exertion, the difference of the time so occupied, compared with that which an operation and subsequent healing would have required, was of little importance. In the next place, there was no evidence that any new shell had been formed, in which case the important parts, beneath or behind the clavicle, might be injured or disturbed by any hasty attempt to remove it. The bone was firmly adherent at its inner end on her admission; and you perceive, by examining this specimen, that no traces of absorption are visible in the middle portion of the fragment.

The absence of a new shell of bone, which in ordinary cases, and in other bones, incloses the sequestrum, will, in this case, account for the early separation of the injured portion. If a new formation had taken place, a solid obstacle would have been opposed to the removal of the fragment. It is curious, however, to remark, that although no substitute had been prepared to do the office of the clavicle, yet the motions and even the power of the arm were little if at all impaired. When we recollect that this bone is the point of attachment for many muscles concerned in the movements of the arm and head, we must be struck with the powers of accommodation possessed by living structures, when not too suddenly injured. The clavicle is broken by a fall,

and at once the arm droops helpless, and the point of the shoulder falls forward on the chest. But four-fifths of the bone may be altogether removed by a slower process, and yet neither of these accidents will occur to any remarkable extent. It has even happened that the entire clavicle has exfoliated, or been thrown off by necrosis, without any loss of power of the limb. A case of this kind is recorded in the *Memoirs of the Academy of Surgery*, Paris, a work replete with valuable facts. In the instance there related, a new clavicle was subsequently formed, and the articulations with the sternum and acromion were affected as in the original bone. In our patient, although the part is healed, there is no evidence of bony deposit as yet. The cicatrix has a firm but yielding feel, and the part can be pushed back without any sense of resistance being communicated greater than belongs to a fibrinous or cartilaginous structure. There can be little doubt, however, that, in due time, new bone will be formed to unite with the portion of the old clavicle which remains attached to the sternum, and to articulate with the acromion at its other extremity. The apparatus is still worn, as calculated to maintain the proper distance between the sternum and shoulder, and cause the new bone to occupy the necessary extent. As to deformity, it is really surprising how little flattening is perceptible, and the cicatrix is becoming narrower every day. I have seen the cicatrix of scrofulous ulceration much more remarkable in every way; and there is reason to hope that when new bone is formed behind it, there will be little to attract attention.

The long-expected death of Ford, the poor woman with fungus of the antrum, affords us an opportunity of ascertaining the condition of the principal organs, and of testing the opinion I entertained as to the nature of the lymphatic swelling which existed beneath the jaw. I shall first read a few of the notes of her case, to refresh your recollection of the appearance of the parts during life.

Fungus of the antrum—Lymphatic contamination—No visceral taint. (Reported by Dr. Drought Dickson.)

Catherine Ford, æt. 45, admitted into St. Mary's Ward, Nov. 5, 1838. She states that for several months before her admission she suffered from pain and swelling of the left cheek, with discharge of bloody fluid occasionally from the nostril of that side. The pain resembled toothache, and excited no apprehension in her mind. The swelling was at first attributed to the same cause, and was disregarded until it had acquired a considerable size.

The tumor occupies the entire region of the superior maxillary bone of the left side. The left eye is much more prominent than the right, and on a plane superior to it. The distance between the inner canthus and nose is much greater than on the opposite side, and the usual depression is filled up by the tumor, which here forms a distinct swelling. The canine fossa is entirely obliterated. The left ala nasi is drawn downwards, and considerably elongated. A fungoid mass is beginning to appear in this nostril, and exudes a foetid discharge of a brownish colour and seropurulent appearance. Within the mouth the palate of the left side, and extending even beyond the middle line, is occupied by an irregular bulging mass, covered only by the mucous membrane. The bone has been absorbed, and the swelling affords only the resistance of elasticity. She is much emaciated, and sallow in colour. Her rest is disturbed by the discharge from the nose flowing back into the fauces.

Beneath the jaw-bone, in the digastric space, a lymphatic, enlarged to the size of an almond, is to be felt; it is remarkably hard to the touch, but is moveable: she has no cough.

These were the notes made at the date of her admission. The extent of parts involved, the extensive destruction of the bones in all directions around the morbid growth, together with the exhausted state of the poor woman, seemed to forbid any operative project. But when we considered that a lymphatic gland had already undergone a morbid change, and that its consistence rendered it very probable, that this change was that of schirroma, I gave up all hope from such a proceeding.

The principal changes that occurred within the first month of her residence in the Hospital, were, the further protrusion and displacement of the eye, and the exposure of the fungus in the mouth, by the giving way of the mucous membrane of the palate. The globe of the eye was displaced more and more every week, and gave to the face that peculiarly hideous expression which is observable in these deplorable cases. At length the axis of the eye was altogether directed outwards and upwards, and the organ protruded almost entirely beyond the eyelids. Notwithstanding all this, vision remained perfect, and she could recognise every person around her, when the opposite eye was closed. The double source of foetid discharge which oozed continually now into the nostrils and mouth, became at length her principal source of complaint, for she had for some time suffered very little from the original pain. It appeared, that the pain diminished in proportion to the destruction of the bones and the free expansion of the tumor.

Early in January she complained of pain in the cheek about its middle. The integuments were inflamed, and a circumscribed swelling distinct from that within was formed. A poultice was applied, and after seven or eight days distinct fluctuation was perceptible in its centre. I made a puncture here, and gave exit to about three drachms of healthy pus. A probe passed into the sac of the abscess gave no indication of its communicating with the antrum. It appeared to be in the substance of the cheek itself. I called your attention to this circumstance at the time, for I deemed it worthy of remark, that a healthy abscess should form over a mass of morbid growth, merely as it would seem from the irritation occasioned by its presence at some distance from the cellular tissue in which pus was formed. I reminded you that analogous collections of matter are occasionally observed in the cellular tissue external to a carious joint, without any communication with disease within. This superficial abscess in Ford's case continued to discharge healthy matter for a few days, and then healed.

From this period until that of her death, in the latter end of January, a degree of somnolency was added to her other symptoms. Her utterance was imperfect, and the constant discharge of fetid ichor, a good deal of which passed into her stomach, destroyed all relish for food: she could not be prevailed on to take nourishment, and her emaciation rapidly increased. She died, in fact, like those who sink from organic disease of the stomach, as much from inanition as from the irritation occasioned by the disease.

Necropsy, twelve hours, post mortem.—You had this morning an opportunity of witnessing the result as follows:—

Chest.—The lungs were sound; a few points of adhesion to the costal pleura were observed towards the base of the right lung posteriorly. The heart was small: the walls bore a reasonable proportion to its size in their thickness. There was no valvular disease.

Abdomen.—The liver was of moderate size; its white tissues rather prevailed, but not to any remarkable degree; carefully made sections in different directions failed to discover any deposit or organic change.

The spleen was of the ordinary hue. The stomach distended with air, and containing some remains of her drinks, with a quantity of glairy mucus. The colour of the mucous membrane was perhaps a little darker than usual, but no vascularity of an arborescent character was observed. There was nothing worthy of remark in the intestines, kidneys, or other parts. The diseased mass was removed, and you here observe the extensive destruction of parts

which it occasioned. The osseous boundaries of the antrum are almost completely removed by absorption. The displacement and disorganization of bones and soft parts in the vicinity of the tumor are remarkable. The structure of the fungus is unequal. You see that it is partly fibrous, and that other portions exhibit a homogeneous and almost lardaceous appearance on section. There is no appearance of softening in any part. We shall now proceed to examine the lymphatic gland, which acquired so little additional bulk while under our observation.

You perceive it is remarkably dense, and cuts like fibro-cartilage; it consists of striæ of transparent pearly colour, between which a yellow texture is to be seen. The latter does not seem to be pulpy, but is evidently less consistent than the other.

So far, then, our diagnosis of the structure of this gland is justified. It is decidedly of schirrous character, and although remaining for months with very little increase of growth, I cannot help thinking that if other circumstances had encouraged the performance of an operation, or afforded the least chance of its success, this lymphatic gland, so degenerated, and having taken on the characters of schirroma, would have been excited into activity, and destroyed the poor woman as effectually as the original disease. Considering the extent of the growth at the period of her presenting herself, and that the mouth, nose, and orbit, were involved in the disease, no surgeon of ordinary prudence and humanity could entertain the idea of an operation.

The post-mortem examination, however, concurs with my own previous experience, and that of others with whom I have conversed, in supporting the probability in such cases of the absence of visceral taint. You are aware that in fungoid growths on other situations, the chances of success from operation are greatly lessened by the frequency of similar morbid deposits in the liver or other organs.

Our means of making minute examination or anatomical analysis of such growths, are not yet sufficiently perfect to enable us to decide whether there be any essential difference between the fungus of the antrum of a malignant appearance, and those which are found elsewhere. But the case before us is quite different from the milder tumors which occupy this situation. Even in its earlier stages it threw out a fungoid mass into the nose, bleeding occasionally, exuding a fetid sanies, and accompanied with a visible decline of health. I would not, however, class it with the medullary fungus, although it seems entitled to some place intermediate between it and the fibrous tumor of the antrum. The peculiar structure which you observe in the lymphatic gland would favour this opinion, and

certainly suggest the rule that when such a tumor is discovered in the course of the absorbents, great caution should be used in deciding on interference by operation.

FATAL SPASMODIC AFFECTION OF THROAT.

To the Editor of the Medical Gazette.

SIR,

IF you consider the following case of sufficient interest to deserve a place in your journal, I shall feel obliged by its insertion.—I am, sir,

Your obedient servant,

R. R. CHEYNE.

Berners Street, April 20, 1840.

A gentleman, aged 34 years, of a highly scrofulous diathesis and feeble constitution, which he possessed in common with nearly every member of his family, had been attacked from time to time, both before and after I was first consulted (now about five years since) with low fever, bringing in its train soreness of the throat, with weakness, loss of voice, dry convulsive cough, dyspepsia, violent spasms of the stomach and vomiting, vertigo, discharge from the ears, and deafness. These symptoms (which did not always prevail together,) were usually attributed to catarrh, and lasted sometimes only a few days; at others, a week, or more, leaving, in the intervals of each attack a state of tolerable health. In addition, however, to these more occasional indications of disease, scrofula, in either an active or passive form, prevailed to an intense degree in various parts of the body, and in particular the glands of the neck were enormously enlarged. Extensive suppuration and ulceration in the latter region, as well as in the left foot, took place about three years ago. The discharge from the neck continued during the ensuing two years; that from the foot (depending upon the presence of necrosis,) persisted to the last. It is remarkable that this profuse rejection of scrofulous matter through the channels of external suppuration seemed to have materially increased the general vigour for the entire year preceding the termination of life.

The disease, which issued in my patient's death, commenced as fever of a remittent character and low type, attended by slight soreness of the throat

and hoarse voice, dry cough, spasms of the stomach, and total loss of appetite. There were no physical signs of tubercular deposition in the lungs, but there was very great diminution of the sounds and impulse of the heart.

The above symptoms gradually declined in severity, so that, at the expiration of a week, they had almost disappeared, when suddenly the case assumed a new and very alarming aspect. The sufferer had awoken out of composed sleep in a fit of dyspnoea, which lasted about a minute, and this had recurred a second time in the course of the quarter of an hour which elapsed before I could reach him. His countenance was then anxious; skin bathed in perspiration; pulse sixty, (common to his best health,) and feeble; respiration perfectly tranquil, and deglutition performed with ease. Shortly after my arrival, I had an opportunity of noting the real nature of the spasms. It was evidently seated in the throat, and compelled my patient to make repeated and violent efforts to fill the lungs, each inspiration producing a crowing sound, exactly like what is noticed in the laryngismus stridulus of children. Before I left him, he had fallen into quiet sleep, which was of some hours' duration, and, with the exception of a slight return at the moment of awaking, he remained free from his alarming symptom, until the evening of the next day, when, directly after the act of deglutition, he was suffocated in the midst of the most awful struggles for air.

It is unnecessary to occupy space in the minute description of the treatment pursued in this case. Upon this head it is sufficient to remark, that throughout, the general principle was steadily kept in view, of supporting the strength, as far as this could be done with a due regard to the nature of the symptoms. I am not sure that the operation of laryngotomy could have been performed with propriety in the absence of any permanent embarrassment in respiration, or of any local or constitutional signs of organic disease of the larynx.

Autopsy, 80 hours after death.—Much objection was made to the examination of the body, and then the dissection was confined to the neck. I was assisted by my friend Mr. Forbes.

Externally, the neck appeared crowded and bulky, and was marked,

from ear to ear, by the scars of former ulceration.

Upon reflecting the skin, platysma, and fascia, numerous superficial glands were exposed in the course of the external jugular vein. The superior cervical glands, and a chain prolonged in the course of and beneath the great vessels and nerves of the neck, were some of them of a large size, whilst all of them displayed different steps, in the series of morbid changes, peculiar to scrofula. Many of these glands completely surrounded and adhered to the sheath of the vessels in its entire course; whilst others, more scattered, must have exerted considerable pressure upon the sympathetic, and those branches of the vagus nerve supplying the pharynx, its constrictor, and the structures of the larynx. The glottis and epiglottis were œdematous, the mucous membrane being of a paler tint than natural, and when laid open, throughout the larynx and trachea, was found to be free from ulceration, and altogether healthy.

REMARKS.—The history of this case, and the result of the dissection (limited as it was) illustrate, in a very satisfactory manner, certain points in physiology and pathology. In the first place, I was disposed to think that the œdema of the glottis did not materially impede the act of respiration. I am, however, aware that very slight obstruction, in this situation, might occasion fatal spasm; but, then, an inflamed or ulcerated state of the mucous membrane almost invariably co-exists as a source of irritation. The interruption to the venous circulation, which must have arisen from the presence of such a mass of enlarged glands, in the vicinity of the glottis, or the violent contraction of the parts, which had taken place just before the death of my patient, may certainly have produced the serous effusion.

It is well known that pressure upon the pharynx or larynx by means of any tumor may excite spasms of those organs, simply from irritation of the sensitive nerves of the mucous membrane, and the reflected influence of the motor nerves; and, also, that *direct* compression or irritation of nerves induce various, more or less important, derangements of their functions. In my friend Dr. W. Baly's abstract of Dr. J. Reid's experiments upon the eighth pair of nerves, it is stated, first, that, on

irritating the pharyngeal branch of the vagus, rapid and vigorous movements of all the pharyngeal muscles and upper part of the œsophagus follow; secondly, that irritation of the inferior laryngeal nerve produces strong movements of the arytenoid cartilages, while irritation of the superior laryngeal nerve (by galvanism) gave rise to no action in any of the muscles attached to the arytenoid cartilages, but merely to contraction of the crico-thyroid muscle; thirdly, that division of the recurrent nerves put an end to the motions of the glottis, but that the sensibility of the mucous membrane remains; that division of the superior laryngeal nerve leaves the movements of the glottis unaffected, but deprives it of its sensibility: fourthly, that irritation of the trunk of the vagus excited motions of the œsophagus which extended over the cardiac portion of the stomach*.

Müller remarks, "That the vagus affords sensitive influence to the organs of voice and respiration, the pharynx, œsophagus, and stomach;" and that "from irritation of the branches of this nerve, which is propagated to the brain, a number of spasmodic movements of the organs of respiration, as coughing, vomiting, &c. are produced." He goes on to say, "that a consideration of all the different results, obtained after tying or dividing the nervus vagus, leads to the inference that death arises from the concurrence of different circumstances, which, at last, produce suffocation. They are the following:—first, incomplete paralysis of the muscles of the glottis; second, exudations in the lungs; third, change in the chemical process going on in the lungs; fourth, coagulation of the blood in the vessels, as observed by Mayer†."

It seems to me, that the pathology of the case I have above detailed offers very beautiful evidence in support of the views of experimental physiology. It is, indeed, difficult to explain many of the remarkable symptoms from which my patient had been so long a sufferer, (and particularly those which preceded his death,) otherwise than upon the supposition that they sprung from direct or indirect irritation of the sympathetic and vagus nerves. And I may add, that probably most of those obstinate

* Müller's Physiology, by Baly.

† Ibid.

spasmodic affections of the organs of respiration and digestion, which so frequently occur in children and adults of a scrofulous habit, owe their origin to a similar cause. The troublesome dyspepsia, also, to which such individuals are extremely subject, perhaps may depend upon the existence of some obstacle to the passage of nervous influence, and the consequent diminution of secretion.

In connection with the above remarks, it is instructive to observe how continually, in the irritable constitutions of children, the sensitive influence of the vagus, and its organic actions, derived from the sympathetic nerve, are disturbed, so as to produce disease which simulates inflammation, but which is purely of a spasmodic nature. For example, a child, said to have been in good health until the moment of the attack, (although the bowels have, in all probability, been torpid, and the motions deficient in bile for some time previously) is suddenly seized with wheezing, dyspnoea, and cough, the pulse being rapid, the skin hot, and the face flushed. This very common sympathetic and spasmodic affection is too often treated as inflammation of the lungs, to which, indeed, it bears a strong resemblance; but it goes off as rapidly as it came on, and really requires nothing more than one or two emetics, and an active mercurial purgative. Much the same condition exists (requiring similar treatment) in many of the cases, called asthma, occurring in adults, and in which the attack may often be distinctly referred to some irritation of the stomach, excited by error in the quantity or quality of the diet. Experience, however, teaches us that irritation or congestion of the brain itself mostly co-exists with, if it do not precede, derangement of the organic functions. Thus, in infantile remittent fever, (the phenomena attending which well illustrate the dependence of nutrition and secretion upon the nervous system,) the paroxysm is marked by an extremely rapid pulse, a flushed face, suffused eyes, hot skin, and drowsiness; or, in other words, by evident cerebral irritation. There are immediately established sympathetic affections of the lungs, stomach, and liver, viz., increased secretion of mucus in the air tubes, with cough, and more or less paralysis of the stomach and liver, as indicated by a total want of appetite, and costiveness.

If food be taken, it is generally vomited in an undigested state, and the motions are chalk-like, or clay-coloured, from deficiency of bile. As the disease advances, delirium, screaming, strabismus, &c. point out a more acute affection of the brain; and, as might be expected, this state is productive of still greater disturbance of the functions of the nerves supplying the organs of respiration and digestion, so that, after a few weeks, if soreness does not follow the treatment, the little patient dies from absolute exhaustion. It is of little consequence to determine whether the brain has been primarily or secondarily affected, inasmuch as the appropriate remedy is adapted for either view of the case. This remedy I believe to be calomel, continued perseveringly in small doses, at regular intervals, until the local and general symptoms give way.

In conclusion, I would observe that numerous cases are daily met with in the practice of medicine, which appear under the forms of obstinate functional disorders of the organs of respiration and digestion, combined with imperfect nutrition and secretion, in which, after the failure of ordinary measures, it would, no doubt, be of much advantage to devote a more exclusive attention to the nervous centres.

NOTES ON THE EFFECTS OF IODINE,

AS A REMEDY FOR CUTANEOUS ERUPTIONS.

BY DR. KENNEDY,

Of Ashby de-la-Zouch.

(For the *Medical Gazette*.)

IN many cases, most of them old both in standing and treatment, I have found the iodine a most efficacious remedy for those disorders of the excrement system which affect the skin, especially the vesicular and pustulous kinds. Such being my experience, I feel desirous of having the practice tested under the observation of others, with a view to its being rendered more extensively useful.

Sometimes, in mild cases and untainted constitutions, the iodine may be used internally without assistance; but, on all occasions, its external application requires to be accompanied by a course of medicines capable of acting on the skin, bowels, and kidneys, so as to improve their functions by its salutary effects.

As the nosology of these diseases must be familiarly known, it will be sufficient here to denote in a simple enumeration such of them as have yielded to the iodine under my instructions. These, then, in Dr. Good's nomenclature, are—

Exormia lichen.—For such of the lichenous rashes as prevail in this climate, the iodine should be exhibited internally with alteratives; and externally, in a tepid or warm solution.

Ex. prurigo.—For the pruriginous rashes, the external iodinated applications should possess considerable energy, and be often applied; with the internal remedies, a proportion of henbane, hemlock, or other anodyne, may be combined.

Lepidosis pityriasis.—For the dandriffs and branny scales, the iodinated lotions must be regulated in strength according to the patient's age: the solution of magnesia, with carminatives, will conduce to their efficiency.

Lep psoriasis.—The dry scales require frequent ablutions with the remedy in a vigorous form, and its powers may be assisted by a general warm bath in saline mineral water, artificially strengthened with an iodinated impregnation.

Ecphlysis pompholyx.—The water-blebs, particularly when large, yield more readily when friction and generous tonics accompany the topical applications.

Ecph. herpes.—For shingles, ring-worm, and the tettery vesicles, the iodine, both in solution and ointment, applied actively, will be materially assisted by the occasional interchange of poultices and emollient embrocations, for the removal of crusts.

Ecph. rhyppia.—Blains are best prevented from degenerating into sordid or gangrenous ulcers by frequent gentle excitement of the parts with iodine, and this must be carefully supported by an energetic constitutional treatment.

Ecph. eczema.—Heat-spots, with their clustering vesicles, resist the iodine less obstinately when it is attended by a course of cooling alteratives, and a weekly warm bath in mineral water, wherein the chlorides predominate.

Ecpyesis impetigo.—All the running scalls have yielded to the iodinated treatment, and this proves most successful when the external applications are

very frequent, but so modified as to stimulate the pustules without inducing excessive irritation; in these affections, the constitutional alterants should be as energetic as the system will admit.

Ecpy. porrigo.—The various scabby scalls require the strongest topical applications of iodine freely and assiduously repeated, with such a systematic internal use of the medicine as to promote its diffusion through the circulating fluids; for ascertaining this effect, the urine may be submitted to suitable tests.

Ecpy. ecthyma.—For the papulous scalls, the local applications must be adapted to the irritability of the system; but the iodine may be administered in free combination with tonic alteratives, so as to purify and invigorate the constitution.

Ecpy. scabies.—For the itches, in all their filthy forms, the iodine will be found an active and almost certain specific; it kills the parasite which originates the disease: the milder cases will yield to an iodinated lotion frequently applied, at the temperature most agreeable to the patient's feelings.

Malis, the cutaneous "invermination."—For the most troublesome kind of pedicular disease, the undiluted tincture of iodine constitutes a powerful and certain, but not disagreeable remedy; it should be continued for some time after the animacules have disappeared, so as to insure the destruction of their eggs.

Four forms of iodinated medicine—*Tinctura Iodini Composita*, *Unguentum Iodini Compositum*, *Potassii Iodidum*, and *Liquor Potassii Compositus*—were employed in treating the cutaneous affections here specified; the two former, as external applications; the two latter, internally as alteratives. The tincture may be applied to the worst parts in succession, in a concentrated or diluted state, by anointing them with it on a feather or hair-pencil thrice in the day, or oftener, as indicated; and at bed-time they should be carefully smeared with the ointment, its proportion being regulated by their tenderness and extent. In the morning there will be advantage in gently washing them with tepid water and soap, before pencilling them with the tincture; and at night, about twice in the week, they may be covered over the ointment, with a common emollient poultice; this removes the incrustations on their becoming firm, and soothes the

sores when they happen to be congested and painful.

For an alterative medicine, the iodide of potassium or its compound solution may be administered twice in the day, in a bitter or other vehicle, with the aperients always at night. With these, the disulphate of quina or some preparation of iron, and occasionally, though seldom, the blue pill or calomel, with ipecacuan or other diaphoretic, may be exhibited in different combinations. At this place, and without impropriety, the question may be raised as regards the properties and effects here ascribed to iodinated medicine; may they not belong more properly to the other active remedies simultaneously administered? Without the iodine, however, these do not prove equally efficient; and, moreover, their results are uncertain, generally imperfect, often unprofitable, even when associated with the usual topical applications.

There is this advantage in the exhibition of iodine for the before-mentioned diseases, that, when the constitution remains sound or little impaired, with the alimentary system healthy, a free external application of the medicine will effect a cure, without assistance from other remedies. Although injurious effects have sometimes, though not often, supervened during the administration of iodine, yet, on such occasions, the inconvenience or suffering should rather be ascribed to an indiscriminate use of the drug, and to the neglect of guarding patients from the liabilities of peculiar constitutions. Iodinated medicines have been liberally prescribed by me, in hundreds of cases; nevertheless, not more than one instance of unfavourable symptoms has occurred, and these happened to a young hysterical female while being treated for a bronchocele or "full neck." She was naturally endowed with much irritability of the nervous system; and this, by her mismanagement of the remedies, was rendered the source of distressing muscular jerkings in the heart, face, and extremities.

Except on very delicate surfaces, or where the skin is abraded, the iodine excites only a transient smarting, and this very seldom becomes severe: should the pain grow intense, as a casual exception, the parts should be carefully fomented with warm water, which will mitigate the symptoms, by diluting or

partially removing the medicine. Usually the iodine produces dry scales or crusts, without corrosion of textures. On inspecting the parts subjected to its action, the observer will perceive, with the assistance of his microscope, the impossibility of their being able to propagate the disease by contagion. If their morbid state is caused by a palpable substance, this will be destroyed; if it is an impalpable essence, its evolution will be counteracted by the topical iodinated applications.

When ring-worm, the scalls, and other "outbreaks" on the head, are being treated, the hair should be constantly kept as short as possible, by cutting it frequently with thin-bladed scissors: in many respects, this method is preferable to that of shaving the parts with a razor. Hair and organic textures get a yellow tinge from the action of iodine; but after its discontinuance, they soon and completely recover their natural colour.

There is good reason, from extensive observation and analogy, for concluding that, under suitable modifications, the iodine will prove an effectual remedy for nearly all the cutaneous disorders, particularly those which derive their local source and support from animalcular depredations. At the same time, every attention is essentially requisite, that proper internal appliances be instituted, with the twofold object of preventing a recession of the superficial malady to a deep-seated structure, and of sustaining the functions of vital organs in a state of vigorous activity.

Without adducing evidence in support of the statement, on the present occasion, my belief is, that most of the vesicular and pustulous eruptions on the skin, are produced and propagated by the "invermination" and incubation of animacules, derived from the atmosphere and disseminated by contagion. My suggestion is, that patience and attentive observation be exercised in endeavouring, with iodinated medicine, to secure the extirpation of these parasites and their eggs from their burrows in the cutaneous structure; and my hope is, that, at no distant period, these detestable intruders will be detected by the ingenuity and perseverance of pathologists experienced in the processes of microscopical investigation.

April 9th, 1840.

ACETATE OF LEAD IN BRONCHITIS.

By WM. HENDERSON, M.D.

Fellow of the Royal College of Physicians, and
Lecturer on Practice of Medicine, Edinburgh.[For the *London Medical Gazette*.]

SEVERAL years ago, having had repeatedly occasion to regret the inefficacy of the medicines commonly used in bronchitis, when the object in view was the restraining of a too abundant secretion, by which the bronchial tubes were loaded, and the respiration greatly embarrassed, I was glad to avail myself of a notice contained in the *MEDICAL GAZETTE* of 1833, and extracted from *Rust's Magazine*, in which the virtues of the acetate of lead were represented as specially adapted to the circumstance in question. The cases in which I had had the greatest reason to feel the want of a remedy which could restrain the secretion from the bronchial membrane, were the bronchitic disorders of children, occurring in connection with measles and with whooping-cough; and it was in cases of this kind that I subsequently had the satisfaction of first witnessing the beneficial operation of the acetate of lead in inflammation of the bronchial mucous membrane.

After a careful investigation of the powers of this remedy, continued for several years, and based on an ample compass both of personal observation and the reported experience of several practitioners to whom I recommended the use of it, I feel warranted in stating my conviction that the acetate of lead is a remedy by far the most worthy of reliance in bronchitis attended with profuse secretion. The useful agency of this preparation is not confined to the bronchitis of measles and whooping-cough, but is equally observable in the simple bronchitis, and in that which so often occurs as a complication of continued fever. In whatever class of cases I have prescribed it, its administration has been limited to that period of the bronchitis in which the evidences of abundant secretion were apparent; and those evidences have formed the only guides which I have found it requisite to follow in the first exhibition of the remedy, and in regulating the bulk and frequency of the doses. The stage or duration of the disease does not require to be regarded in prescribing the ace-

tate; and, though it exerts a signal and most salutary influence on the secretion of chronic mucous catarrhs, it has always appeared to me that its chief value consists in the rapidity of its operation in such acute cases as are characterized by copious secretion, whether of the muco-purulent appearance or not, whereby the respiration is impeded, and suffocation is threatened.

In acute bronchitis, diverse effects have been observed to succeed the use of the lead. In some instances a very speedy and entire removal of the rattle has ensued, without the pulse having been lessened in frequency, or the respiratory acts materially altered from their previous condition. In such I have been accustomed to omit the lead, and to recur to the antimony, ipecacuan, and calomel, or to whatever remedy had been previously used. In a second class of cases, the rattles have merely undergone a considerable diminution, while the other symptoms have continued nearly or altogether as before. In those I have found it of great advantage to alternate, with the exhibition of the acetate of lead, either the antimony or calomel and ipecacuan. In a third class, no material change of any kind has followed the use of the lead for several days. The cases of this class, for the most part, consisted of whooping-cough, with intense general bronchitis; and in the treatment of them, the acetate has been given in much larger quantity, and continued longer than in the others. I have repeatedly ascertained, in cases of this kind, that though the number of rattles, and the apparent amount of the secretion, seemed but little reduced from the state which they had presented on the lead being first administered, a marked change for the worse has followed the omission of it. In this class of cases, the doses of lead have been usually alternated with those of some common remedy; yet the latter have been frequently omitted, unless some indication of pneumonia existed, without apparent disadvantage. In a fourth class, composed mostly of cases in which the secretion appeared, from its extreme abundance, to be the principal cause of the more harassing symptoms—to wit, the hurried acts of respiration, dyspnoea, and consequent restlessness, &c.—the decrease in the number of the rattles, more especially the larger mucous rattles, which has commonly soon

followed the administration of the lead, has been very generally accompanied by a commensurate decrease in the other important symptoms. In not a few instances of feeble children, labouring under acute general bronchitis with copious secretion, have the effects of the acetate been observed, by myself and others, so promptly and decidedly manifested as to excite no little surprise, and to alter the prognosis speedily, from a very gloomy to a very cheerful aspect.

The dose in which this medicine may be given must vary with the exigencies of the case and the age of the patient; though the latter particular is of less importance. Indeed I have hitherto found occasion to give it in much larger quantity to children than to adults, owing to the much greater frequency and severity of acute bronchitis in the former. The quantity taken in twenty-four hours by an adult has not exceeded twelve grains, in doses of from one to three grains. The cases of acute bronchitis in the adult in which I have used the lead, have been mostly complications of continued fever. Along with the lead there were usually given a few grains of the compound powder of ipecacuan; sometimes with the addition of the powdered squill. The common doses to children have been, according to the severity of the case, a quarter, half, or whole grain, from to eight or ten times a day. In one very severe, and at one time almost hopeless case, so much as four scruples were swallowed within ten days. The child was six years old, and the disease intense general bronchitis, supervening on whooping-cough. No such bad effects succeeded as are too commonly dreaded from them medicinal use of the acetate of lead, though the gums corresponding to the lower incisors exhibited the blue tint pointed out by Dr. Burton, on the fifteenth day from the commencement of the use of the lead, and it is probable that it existed previously to that date, though unobserved. Nor have I hitherto witnessed in any case the dreaded effects of the lead, not even to the extent of causing constipation.

In the chronic mucous and mucopurulent bronchitis, there is no remedy, I firmly believe, (and I have tried a great many) that possesses nearly the controlling power over the quantity of the secretion, which is displayed by the acetate of lead. I usually give it in a

pill containing one or two grains, along with some extract of hyoscyamus and a grain of squill, three or four times a-day.

I have thought it of consequence to let the experience which I have had of the properties of this remedy in bronchitis, be known; because it appears that they have nearly or entirely escaped the notice of the generality of practitioners. The only suggestions with which I am acquainted, of the utility of the acetate of lead in bronchial inflammations, besides that to which I have referred, are by Sauvages, in his *Nosologia Methodica*; by Dr. Reece, in the fifteenth volume of the *Medical and Chirurgical Review* (both of whom recommend it merely to relieve irritation in whooping-cough); and by Dr. Stokes, in his first volume on *Diseases of the Chest*, who conjectures that it might be of advantage in certain forms of chronic bronchitis.

ON THE TREATMENT OF SPRAINS BY STARCHED BANDAGES.

To the Editor of the Medical Gazette.

SIR,

I AM induced to send you the following observations on the treatment of sprains with starched bandages, in consequence of the success which I have observed to follow that method of cure.

Accidents of this kind are sometimes both extremely tedious and annoying to the medical attendant, not only from the pain which the patient has been obliged to endure, but also from the vexation which absence from business and confinement to the house produce. The plan of treatment which we recommend is quite similar to that used and recommended by MM. Larrey and Lentin, in fractures of the extremities, and the advantages which accrue from it, are chiefly in enabling the patient to go sooner about and attend to his usual occupation, without at all retarding the cure. If the contained observations should meet your approbation, I shall feel obliged by your inserting them in your excellent and useful periodical.

I have the honour to be, sir,

Your most obedient servant,

ROBERT PATERSON, M.D.

Physician to the Leith Dispensary,
&c. &c. &c.

North Leith, Apr 17, 1840.

Sprains, as is well known, are generally produced by great force applied to a joint, or by a smaller degree of force awkwardly applied when the muscles of the limb are unprepared for it; the result of which is, that the ligaments, tendons, and their sheaths, which surround the joint, are violently stretched, and in some cases torn. After a short time, sometimes almost immediately, great tumefaction and stiffness of the affected joint takes place, from effusion of blood and serous fluid. Such cases are of very common occurrence, and are familiar to every practitioner. They are universally classed among the most tedious and troublesome cases which fall under the care of the surgeon. The treatment adopted by different practitioners is extremely various; some apply leeches, others cold evaporating lotions, others warm fomentations, while some trust to stimulating frictions, and perhaps it is a general fault among medical men to resort too much to one method of cure, to the exclusion of other means. The treatment of such cases which we have been in the habit of following for some time past, has certainly been attended with more decided success than any which had formerly come under our notice. Not only is the patient saved much suffering, but is enabled sooner to attend to his duties, and to take that exercise in the open air, which is so congenial to health and speedy convalescence. By means of the following treatment, our patients may, (even after having suffered a very severe sprain), be enabled to go about their usual avocations in six or eight days. Upon being called to a case where a sprain has occurred, the extremity must be elevated and kept at rest. Cold evaporating lotions, or warm fomentations, are to be applied according as the one or other is more agreeable to the patient's feelings, and also according as we see the case immediately after the injury, or some time after its occurrence; in the latter case, warm fomentations are always most beneficial, and most relished by the patient. It may be necessary also to use local blood-letting, when symptoms of inflammatory action make their appearance; this, however, we believe will seldom if ever be required if the accident is seen at an early period. After the swelling around the joint and in the course of the tendons has nearly subsided, under

the use of such or similar applications, the starched bandages, first recommended by M. Larrey, and afterwards by Dr. Lentin, of Brussels, in fractures of the extremities, are to be applied. In the employment of these bandages, it is of the greatest consequence not to apply them so long as the limb continues very painful or much swollen; at the same time, it does not do to wait until the pain has altogether subsided, or the swelling entirely fallen, for this is seldom accomplished until a considerable time has elapsed, and until a bandage is applied.

In applying the bandage we always follow the plan of Dr. Lentin, of Brussels*. Two or three pieces of broad stout cloth, well covered with starch, are to be folded and applied on each side of the limb, across the affected joint. One or two rollers also well starched are then applied over these, not very tight, but still of sufficient tightness to give gentle compression to the whole of that portion of the limb. These dry readily in twenty-four or thirty-six hours, on exposure to the air. It has been recommended to facilitate the drying of the starch, by passing a heated smoothing iron over the bandages, but we have found that this has a tendency to render the limb more painful, and to increase the inflammatory action in the part.

The size and length of the bandages are always to be proportioned to the joint over which they are to be applied.

Sprains most commonly occur in the wrist and ankle-joints, and then it is advisable to use bandages which will reach respectively from the middle of the fore-arm to the palm of the hand, and from the middle of the leg to the digito-tarsal articulation.

The advantages resulting from this plan of treating sprains are obvious: it exerts a comfortable and most beneficial degree of pressure upon the injured parts, while the moisture of the starched bandages acts as a temporary fomentation, and when they dry, the stiffness which they acquire, and the continued and regular pressure which they exert upon every point to which they are applied, completely prevent every kind of motion of the injured joint, even al-

* M. Larrey, junior, sur le traitement des fractures par l'appareil immobile de Dr. Lentin, &c. &c.

though the patient may be using the rest of his body very actively.

It may be well to mention, however, that it is sometimes necessary to apply a couple of strong pasteboard splints on each side of the injured joint, until the bandages dry.

In the course of the last six or eight months, during which time we have had occasion to treat a considerable number of severe sprains of the wrist and ankle-joint, we have been well satisfied with the progress which they made under the plan of treatment just detailed.

The two following cases have been selected not only on account of the severity of the injury, but also because of the speedy cure which was effected; and it is hoped they will serve sufficiently to illustrate the subject.

Two men, one on the occasion of the Queen's marriage, in cleaning the windows of a house in the third flat, fell, and, besides receiving other bruises and wounds, severely sprained his ankle joint. The other fell through the flooring of a distillery loft, the beams of which had been charred by the kiln beneath, and also, (in addition to other bruises) received a severe sprain of the ankle joint. Both were treated in the manner we have described: the one was enabled to go about with the assistance of a stick in the course of five or six days from the receipt of the injury, and to return to his work in the course of as many days more; the convalescence of the other case was a little longer delayed, solely on account of the bruises he had sustained.

PTYALISM FROM THE MEDICINAL USE OF ARSENIC.

To the Editor of the Medical Gazette.

SIR,

If the accompanying case is worth a corner in your useful record of medical facts, I beg to place it at your disposal.

I am, sir,

Your obedient servant,

GEORGE JONES.

St. Leonard's-on Sea, April 28, 1840.

In consequence of a paper by Mr. Hunt, reported at p. 77, vol. 2, of the MEDICAL GAZETTE, I have occasionally prescribed arsenic in cases of mœnor-

rhagia, and with manifest advantage. The following very decided cure from its use was attended with symptoms which I have no recollection to have seen recorded as resulting from the medicinal use of this mineral, and may, therefore, not be uninteresting to your readers.

Mrs. L., æt. 46, stout in person, and of a florid complexion, says, that "for several months she has not been free from the menstrual evacuation, and that now she is almost drained by it."

℞ Liq. Arsenic, ʒij.; Sp. Lav. C. ʒi. M.
Capt. gtt. vij. ter quotidie ex aqua.

The case was nearly lost sight of for a month, during which she had continued to take the drops: at the end of that time, she applied to me on account of what, on a cursory view, led me to imagine was the effect of mercury—extreme siccator of breath, superficial ulceration of the gums and fauces generally, with increased salivary secretion. She then made the following statement:—After the drops had been taken, with little or no inconvenience, for a fortnight, the mœnorrhagia gradually subsided into an offensive discharge of a muco-purulent character, which has now left her altogether; at the same time the secretion of saliva increased, and her mouth became slightly affected. Not suspecting that the soreness could be referrible to the medicine, she continued its use as long as it lasted. Her mouth continuing to get worse, she then made application for further advice. In about a week or ten days she became convalescent, under the following treatment.

℞ Magnes. Sulph. ʒi.; Acid. Sulph. D. ʒi.; Aquæ, ʒvj. M. partitis vicibus, sumend. donec respond. alvus.

℞ Sol. Sodæ Chlor. ʒi. Aquæ, ʒxi.; M. ft. Lotio pro ore sæpe utend.

℞ Argent. Nitrat. gr. iss. Acid. Nitrici, gtt. v. Aquæ Distill. ʒij. M. Capt. coch. parvum, ex Aqua 4tis horis.

POPLITEAL ANEURISM.

To the Editor of the Medical Gazette.

SIR,

SHOULD you consider a report of the following case worthy a place in your widely circulating journal, I should be obliged to you to insert it.—I am, sir,

Your obedient servant,

HENRY BULLOCK.

Uxbridge, April 30, 1840.

William Flanders, a policeman, aged 41 years, the subject of popliteal aneurism of six months standing, was admitted a patient of the Uxbridge Dispensary on the 30th of December, 1839. The tumor was of immense size, filling the popliteal space, the circumscribed aneurismal sac alone being as large as a fetal head, besides the general swelling of neighbouring parts. The leg was œdematous, and flexed nearly at a right angle, and the veins were varicose, while no pulsation could be detected either in the posterior or anterior tibial artery. Under these untoward circumstances, it was thought by several surgeons questionable whether, the femoral artery being secured, the collateral circulation would be adequate to the support of the limb, from the probable obstruction of the anastomosing branches of the profunda artery. Notwithstanding the success of the ligature was thus rendered doubtful, I was anxious to make trial of this operation, presuming that the prospect of the man's recovery, even after amputation, in the event of our being driven to that extremity, would not have been materially lessened by the application of the ligature. The operation was therefore performed about four inches below Poupart's ligament. It occurred to me, that the aneurismal needle, unarmed, might be insinuated around the artery with greater facility, and less detachment of the artery from its sheath, than armed with the ligature, and nothing can be more practicable than to pass the silk through the eye of the needle whilst beneath the artery. This modification of the ordinary operation I thought desirable, since the effect of the ligature depends so essentially upon the non disturbance of surrounding parts. The ligature being tied, all pulsation ceased, and the tumor became flaccid and diminished. Without burdening the case with details, I will conclude by stating, that the man progressed uniformly well, the wound had healed by the fifth day, leaving space only for the ligature, which separated on the twenty-fourth day, and at the expiration of three months, his heel having reached the ground, he could walk tolerably well.

There is still an induration of the popliteal space, about the size of a pigeon's egg, but which is evidently subsiding. Notwithstanding the limb is perfectly well nourished, and at the na-

tural temperature, yet there is no perceptible pulsation either in the anterior or posterior tibial artery.

OBSERVATIONS
ON THE CAVERNOUS SINUS,
WITH THE DESCRIPTION OF AN ADDITIONAL
SINUS, OCCASIONALLY FOUND IN ITS
EXTERNAL WALL.

BY JAMES MERCER, M.D.,
Demonstrator in the School of Anatomy, 4, Surgeons' Square, Edinburgh.

[For the *London Medical Gazette*.]

ANATOMISTS usually divide the sinuses of the cranial cavity into two classes; the first, embracing all those which are formed in the folds of the dura mater suspended within the cavity, and which return nearly the whole of the blood circulated in the substance of the cerebrum and cerebellum, and in the meninges of the upper part of the cavity and the folds themselves; and the second, including all those which are formed in the membrane lining the different fossæ in the base of the cranium, and which return the blood circulated in the contents of the orbital cavities, in the membranes of the base of the skull, as well as a considerable portion of that which has been circulated in the inferior surfaces of the anterior and middle lobes of the cerebrum.

Each of these classes of sinuses has one which is the common receptacle, and forms the centre of communication with the whole of the sinuses of that class.

To those of the first class, we find the large cavity called the torcular herophili forming this centre of communication to the other sinuses belonging to this class; and to the second, the large regular cavities placed in the membrane covering the side of the body of the sphenoid bone, performs the same offices. Connected with the latter sinuses, there is a circumstance which we have observed several times of late, and which we have not been able to find taken notice of by any preceding anatomists.

Some time ago, whilst demonstrating these different sinuses to the pupils, in the Anatomical Rooms, we observed a very large and distinct sinus, situated in the external wall of the cavernous sinus, and having no connection with the latter cavity. Having several times

repeated these observations since that period, and with the same results in almost every instance, and not finding the occurrence of such a state of parts taken notice of by our best authorities on the subject, we have been induced to draw up the following observations regarding its situation and formation:—

As the situation of this sinus, however, is so intimately connected with the cavernous, and as its description cannot be given without frequent and repeated reference to it, we deem it necessary, in the first place, to allude shortly to the situation and formation of the cavernous sinus; and secondly, to describe the situation and formation of this additional sinus, to which our present observations more particularly belong.

The large irregular cavity of the cavernous sinus, is placed, as we have stated, along the side of the body of the sphenoid bone, and is principally formed by the expansion of the ophthalmic sinus between the irregular splitting of the dura mater, extending between the anterior and posterior clinoid processes.

Anteriorly, it lies immediately behind the foramen lacerum anterius, at its internal extremity or base, and under cover of the anterior clinoid process; opening into it in this situation, we find the large ophthalmic sinus, which leaves the orbital and enters the cranial cavity by the above-named fissure.

Posteriorly, it is formed by the extreme point of the tentorium cerebelli and the posterior clinoid process; and, extending between the inferior surface of this process and the apex of the petrous portion of the temporal bone, we have generally found a very thick, rounded and distinct band of fibres, dividing the posterior wall of the sinus into two parts, and converting the concavity beneath the posterior clinoid process into a distinct foramen. The external of these divisions leads directly outwards, and becomes the superior petrosal sinus; whilst the internal runs downwards and a little outwards, and becomes the inferior petrosal sinus.

Superiorly, it is formed by the extension of the dura mater from the anterior to the posterior clinoid process.

Inferiorly, it rests upon the apex of the petrous portion of the temporal bone, the cartilage filling up the foramen lacerum medium, and the superior opening of the carotid canal, and extending as far anteriorly as the base of the fora-

men lacerum anterius. From these different parts, it is separated by a thin layer of dura mater, and leading downwards from it, through the foramen lacerum medium, we find a tubular prolongation of the dura mater with the lining membrane of the sinus, and this, ultimately, becomes the superior pharyngeal vein.

Its internal wall is formed partly by the side of the body of the sphenoid bone, and partly by the dura mater, which extends between the anterior and posterior walls of the sella turcica. This latter part of the internal wall is rendered concave by the body of the pituitary gland, before and behind which we generally find a large sinus, passing across the sella turcica to the sinus of the opposite side, and thereby forming what is usually denominated the circle of Ridley.

The external wall of the sinus is the greatest in point of extent of surface, and in the density of the membrane which forms it. It extends, superiorly, from the surfaces of the clinoid processes; inferiorly, to the apex of the petrous portion of the temporal and the great wing of the sphenoid bones. Anteriorly, it stretches to the base of the foramen lacerum anterius; and posteriorly, to the point where the tentorium cerebelli is attached to the tip of the posterior clinoid process.

In this, the external wall, it is generally stated, that we find the trunks of the third and fourth pairs of nerves, imbedded in and intimately united with the membrane which forms it. This opinion, however, is not generally correct, for instead of the dura mater being intimately adherent to the periphery of these nerves, we have often found it in the form of a distinct canal, lined with a tubular prolongation of the arachnoid membrane, and extending as far as the limits of the external wall of the sinus. Beyond this, the dura mater forms the external fibrous covering of these nerves. This tubular prolongation of the dura mater and arachnoid membrane, is easily seen extending around the trunk of the third pair of nerves.

This circumstance, viewed pathologically, is of importance, in so far as it points out to us anatomically the first step towards the formation of those large cystic tumors which sometimes appear on the upper part of the face, in hydrocephalic fœtuses, and which tumors

communicate with the cranial cavity through the roof of the nose.

In all these cases, there is also considerable malformation, by deficiency of the ethmoid, sphenoid, and frontal bones.

The fifth pair of nerves lie to the outer side of the walls of the sinus; whilst the sixth pair, with the carotid artery and its plexus, lie within its cavity. These parts, however, need not be mentioned farther, as they do not bear upon our present subject.

The cavernous sinuses result from the expansion of the ophthalmic sinuses, but besides these large trunks, we have a number of other veins pouring their contents directly into the cavities of the sinuses.

Of these, the first are the veins coming from the anterior cranial fossa, and a part of those which are returned from the middle cranial fossa. The remainder of these latter branches usually open into the superior petrosal sinus.

Occasionally, there are also a few branches from the inferior surface of the anterior and middle lobes of the cerebrum; but these latter, as well as the anterior meningeal veins, generally open into and form that additional sinus, about to be described.

Leading from the cavernous sinus on either side, we find three large trunks.

The first is the smallest, and leads downwards from the floor of the cavity, and passing through the foramen lacerum medium, becomes the superior pharyngeal vein.

The second efferent vein is the superior petrosal. This runs outwards between the lamina of the tentorium cerebelli, at its attachment to the posterior superior margin of the petrous portion of the temporal bone, and, ultimately, pours its contents into the lateral sinus; whilst this latter sinus lies in the sigmoid groove of the squamous division of the temporal bone.

The third efferent vein, is the inferior petrosal, which is considerably larger than the preceding. This vein, at first, runs directly downwards, and then a little outwards over the suture, between the apex of the petrous portion of the temporal and the basilar process of the occipital bones, and opens into the lateral sinus, as it is about to emerge from the cranial cavity by the foramen lacerum posterius.

The cavities of the cavernous sinuses are connected together by means of two

transverse branches. One, generally the smallest, passes in front of the infundibulum and pituitary gland, and receives the name of the circular; whilst the second and largest passes behind these two bodies, and is called the elliptical sinus.

By means of these two branches, a very free connection is kept up between the cavities of the two cavernous sinuses; and when the whole are viewed together, a perfect circle can be formed, and this, in honour of its discoverer, receives the name of the circle of Ridley.

Into these transverse branches we find a number of small branches opening.

Some of these come from the substance of the pituitary gland, others from the anterior and inferior part of the walls of the third ventricle, and these open into the circular or anterior transverse branch.

In their course to this vein, they run through the locus perforatus anterior, and receive in this course the small veins from the loose subarachnoid tissue in the anterior concavity of the optic commissure.

Another set of branches come from the posterior part of the walls of the third ventricle, and running through the locus perforatus posterior, receive in their course the veins from the surface of the crura cerebri, and around the roots of the third pair of nerves, and the loose tissue in the posterior concavity of the optic commissure, and they, ultimately, open into the posterior or elliptical sinus.

Having thus described the general anatomical peculiarities of the cavernous sinus, we shall now in the second place describe that additional sinus which we have found in its external wall.

This sinus, so situated, is formed entirely by the splitting of the dura mater, which forms this wall of the cavernous sinus. In length, it generally exceeds the latter sinus; but its depth, as taken from above downwards, is by no means so great. Anteriorly, its cavity commences about a quarter of an inch external to that of the cavernous, and is placed entirely under cover of the small wing of the sphenoid bone. From thence it sweeps forwards and inwards, and at first inclines a little downwards, thereby causing it to assume a lunated form; the concavity of which is placed superiorly, and the convexity being directed downwards and outwards, and lying over the body of the Gasserian ganglion. Posteriorly, it terminates a little in front

of the posterior clinoid process, in a small efferent vein, which proceeding outwards over the trunk of the fifth pair of nerves, opens into the superior petrosal sinus, immediately above the internal opening of the meatus auditorius internus.

The superior margin of the sinus is concave, its inferior is convex; the external wall is comparatively thin, whilst the internal is very thick, and forms the external side of the cavernous sinus.

In the superior part of this septum, we find the trunks of the motor oculi and trochlearis nerves, lying as we have already described, in distinct canals, formed by the splitting of the membrane which constitutes the septum.

At the part of the septum where they are situated, there is a considerable increase in its thickness.

The average length of the cavity of the sinus is about half an inch; but it varies much in this respect. In some instances it extends to a considerable way beneath the small wing of the sphenoid bone, in the immediate situation and direction of the foramen lacerum anterius.

The principal veins, which pour their contents into this sinus, are those which come from the fissure of Sylvius; but the vein which evidently forms it by its direct expansion, is the anterior meningeal vein.

This vein returns all the blood which has been circulated in the membrane lining the anterior cranial fossa, and the different branches which form it run outwards toward the termination of the small wing of the sphenoid bone. There they unite, and form a trunk of considerable size, which is placed between the lamina of the sphenoidal fold of dura mater. From this point, the vein passes at first directly forwards, following the direction of the free margin of the small wing of the sphenoid bone, and after a little it inclines downwards, so that, in its course to the external wall of the cavernous sinus, it crosses the foramen lacerum anterius, generally close beneath the anterior clinoid process; but occasionally it is placed about half an inch external to it. On arriving opposite the anterior extremity of the cavernous sinus, this trunk expands, and forms the cavity of the sinus.

The large middle cerebral, with one or two small branches from the anterior cerebral veins, in the commissura magna

cerebri, at its inferior termination, open into the primary trunk of the sinus, immediately external to the anterior clinoid process. Along the whole of the course of the primary trunk, whilst it lies in the sphenoidal fold of dura mater, there are several branches running into it, which come from the fissure of Sylvius, and the approximated margins of the anterior and middle lobes of the cerebrum. These latter branches are always truncated in the removal of the brain from the cranial cavity, and by tracing them along to their termination, we have a very sure method of exhibiting the cavity of this sinus.

It was by so doing that we were led to observe its existence; for the usual mode recommended for the displaying of the cavity, and the contents of the cavernous sinus, generally destroy its walls so much, as to render the demonstration of the existence of the sinus now described, very difficult and unsatisfactory.

Along with these different veins, which open into the primary trunk of the sinus, we have often noticed a considerable branch coming from the vein which accompanies the middle meningeal artery along the dura mater, lining the roof of the cranial cavity. This branch joins the primary trunk at the apex of the small wing of the sphenoid bone.

Occasionally some of the veins in the fore part of the middle cranial fossa open into it from below, but these branches more frequently open into the cavernous or superior petrosal sinuses. We have never seen any branch from the orbital cavities join either the primary trunk, or the cavity of the sinus, nor have we ever been able to trace a connection between its cavity and that of the cavernous sinus.

The efferent vein of the sinus has already been described. It is about an inch in length, and is small when compared to the size of the cavity of the sinus. It runs backwards and outwards, crossing over, in its course, the trunk of the trifacial nerve, immediately behind the Gasserian ganglion, and opens in an oblique manner into the superior petrosal sinus, immediately above the internal opening of the meatus auditorius internus.

REMARKS

ON

THE PHARMACOPŒIA OF THE
ROYAL COLLEGE OF PHYSICI-
CIANS, EDINBURGH, 1839.

BY RICHARD PHILLIPS, F.R.S. &c.

[For the London Medical Gazette.]

(Continued from p. 761 of vol. ii. for 1838-9.)

AFTER the lapse of a longer interval than I had anticipated, I resume my observations on the Edinburgh Pharmacopœia.

Acetum destillatum.—In my remarks already published, I showed that by the College process a considerable quantity of vinegar was wasted, owing to their directing too small a portion to be distilled; the amount of this loss I have now ascertained. From f $\frac{3}{4}$ 40 of English vinegar I distilled, as ordered, f $\frac{3}{4}$ 30; its density was 1006. I afterwards obtained f $\frac{3}{4}$ 5 more, and its density was 1009.3; the former contains about 3.53 per cent. of acetic acid, and the latter 5.4, consequently the acetic acid contained in the $\frac{3}{4}$ 30 amounted to 466 grains, and that in the $\frac{3}{4}$ 5 to 120 grains; so that owing to the directions for distilling only $\frac{3}{4}$ 30 instead of $\frac{3}{4}$ 35, scarcely four-fifths of the vinegar which might be obtained are actually procured, and for this very considerable loss no adequate reason can be assigned. I also distilled $\frac{3}{4}$ 30 and $\frac{3}{4}$ 5 from $\frac{3}{4}$ 40 of French vinegar; the results corresponded so exactly with those above stated, that it is needless to describe them.

Acidum Aceticum.—The directions for preparing this acid are as follows:—

“Take of acetate of lead any convenient quantity: heat it gradually in a porcelain basin by means of a bath of oil or fusible metal (8 tin, 4 lead, 3 bismuth) to 320°F.; and stir till the fused mass concretes again: pulverize this when cold, and heat the powder again to 320°, with frequent stirring, till the particles cease to accrete. Add six ounces of the powder to nine fluid drachms and a half of pure sulphuric acid contained in a glass matrass: attach a proper tube and refrigerator; and distil from a fusible metal bath with a heat of 320° to complete dryness. Agitate the distilled liquid with a grain or two of red oxide of lead to remove a little sulphurous acid, allow the vessel to rest a few minutes, pour off the clear liquor, and redistil it. The density should not be above 1065.”

I have attempted to follow this pro-

cess, and if (which I very much doubt) any one else ever did, he must, I think, have found that it is much more easy to fail than to succeed in it. The College evidently intend to procure glacial, or the strongest acetic acid; for what medicinal use it can be required, I shall not enquire; I may perhaps make another attempt to prepare it. In the meantime, I will state, as the results of experiments which I have already performed, some of the more glaring imperfections (to use a gentle expression) of the directions issued by the College.

In the first place, that the acetate of lead may be rendered anhydrous, it is to be heated to 320° of Fahrenheit, stirred till the mass concretes, to be pulverized when cold, again heated to 320° till the particles cease to accrete;* no *accretion*, however, occurs after *concretion* and pulverization, so that one-half of these directions is needless.

In the second place, doubting whether so high a temperature as 320°, and the troublesome means of applying it, were requisite to deprive acetate of lead of its water of crystallization, I heated ten oz. of this salt in a porcelain vessel over boiling water, occasionally stirring it. When it had ceased to lose water, there were left 8 ounces and 264 grains, which is within a few grains of what the salt ought to have weighed if perfectly anhydrous, taking the equivalent of it when crystallized at 190, and as containing three equivalents of water.

Thus, then, it is evident that the heat of boiling water, and occasional stirring, are capable of effecting what is directed to be performed with constant stirring at 320°, by a fusible metal bath, the use of which is inconvenient and expensive; or by an oil bath, which has the additional demerits of being disagreeable and dangerous. In both these methods, and especially the former, it is difficult to keep the matrass immersed in the heated fluid; the use of a thermometer is required, and it must be constantly watched lest the temperature should rise too high, which in the fusible metal bath it must have a great tendency rapidly to do.

In the third place, I shall consider whether acetate of lead is the salt best adapted for yielding acetic acid. My first objection is, that it is an extremely inconvenient substance to mix with the sulphuric acid required to decompose

* I have not been able to find this word in any dictionary which I have consulted.

it, for they form a most tenacious compound. As a preliminary trial, on a very small scale, of the mode in which these substances would act upon each other, I added 30 minims of the acid to 140 grains of the acetate, and mixed them with a glass stirrer, which was suffered to remain in the mixture, and was retained by it with such force, that it required a weight equal to several ounces to separate them; this renders it difficult to mix the ingredients by agitation, and to do so by stirring in the matrass is impossible. Such indeed is the tenacity of this mixture, that cases may arise in which it may be usefully employed as a cement.

In the fourth place, the use of acetate of lead is highly objectionable on account of the extreme insolubility of the residual sulphate of lead, and the consequent difficulty in clearing the matrass for a second operation. Another objection is its cost compared with that of other acetates; acetate of soda, for example, is a salt which may be advantageously used for preparing glacial acetic acid; its original cost is, indeed, the same as that of acetate of lead, but then 100 parts of this contain only 26·8 of acetic acid, whereas 100 of the soda salt contain 37·23. I find that it also may be rendered anhydrous at 212°. In an economical point of view, therefore, the use of acetate of soda is more advantageous than that of acetate of lead, in the proportion nearly of 14 to 10, and there is the great contingent benefit of the easy removal of the residual sulphate of soda from the matrass, and this is a salt of some little value, whereas the sulphate of lead obtained by the College process is of no use whatever.

Acetate of lead was probably selected by the College in consequence of the statement of Despretz (*Ann. de Chim. et de Phys.* t. 43, p. 223) that he had procured crystallizable acetic acid from it; this information is accompanied with the assertion that the process for preparing the acid of this strength is kept a secret. That it may have been so in France is probable, but it was published in England 20 years since by Messrs. J. and P. Taylor, in the sixth volume of the *Royal Institution Journal*; they obtained the glacial acid by using fused acetate of soda, oil of vitriol, and glass retorts, and most probably a common sand heat, for they make no mention of metal or oil baths as requisite to the success of the operation. I may here

mention a curious distinction made by the College, on the subject of modes of heating: when the acetate of lead is to be deprived of its water of crystallization by exposure to a heat of 320°, we may perform the operation "by means of a bath of oil or fusible metal," but when the acetate of lead is to be decomposed at the same temperature, we are directed to "distil from a fusible metal bath;" so that in the first part of the operation we are at liberty to use the better of two bad methods, while in the second, we are restricted to the employment of the worse.

The necessity for having recourse to sulphuric acid purer than that of commerce I cannot discover; if it be merely on account of its greater strength, the acid might be obtained of equal density by simple concentration, which is an operation of much less risk than that of rectification. Messrs. Taylor appear to have used common commercial acid.

Any sulphurous acid which the acetic acid may contain, the College have directed to be removed by agitating it with a grain or two of red oxide of lead, and then redistilling it. Messrs. Taylor used acetate of lead for this purpose, and so, in point of fact, do the College; for when the red oxide is put into acetic acid, it is immediately separated into protoxide and binoxide, and the acetate which the former yields is instantly decomposed by sulphurous acid, whereas the action of sulphurous acid upon dentoxide of lead, so as to become sulphuric acid, is comparatively slow.

As the College have thus limited the quantity of red oxide of lead to be used, let us inquire what must have been the greatest amount of impurity which they supposed the acetic acid to contain; for I know not what other consideration could have induced the limitation of its employment to two grains, when a considerably larger quantity of the acetate of lead than absolutely required would have occasioned but little loss, and no inconvenience.

Two grains of red oxide of lead are equivalent to 1·3 gr. of protoxide, and 0·7 gr. of binoxide; the protoxide is capable of combining with 0·37 gr. of sulphurous acid, and the excess of oxygen in the binoxide is sufficient to convert 0·18 grain of sulphurous into sulphuric acid; the quantity of sulphurous acid, therefore, which the College suppose the product to contain, cannot exceed 0·55 of a grain.

Now it will appear by a calculation, which it is not necessary to state, that the ingredients used by the College ought to produce more than 1000 grains of glacial acetic acid, and it is a provoking circumstance, if it be well founded, that this product should require the wasteful operation of being redistilled on account of its containing only about 1-2000th of its weight of impurity; or, indeed, if the smaller quantity of deutoxide of lead mentioned by the College be sufficient to purify the acetic acid, the sulphurous acid cannot exceed about 1-4000th of the weight of the acid obtained.

Until more leisure than I have lately had will permit me again to attempt the preparation of this acid according to the directions of the College, I shall quit the subject with remarking, that whether the product be more or less pure than the College suspect, or whether it has a "density not above 1068·5," as stated at p. 2 of the Pharmacopœia, or "not above 1065," as directed at p. 44, the process is to be strongly condemned for its inconvenience and expense.

Acidum Nitricum purum.—The formula of the London College is adopted, and is a great improvement on the former process.

Acidum Nitricum dilutum.—The directions for preparing this are as follows:—

"Mix together three fluidounces of nitric acid (commercial), and four fluid ounces of water. If pure nitric acid be used, four fluidounces of it must be mixed with six fluid ounces of water. The density of this preparation is 1290."

As the College state the sp. gr. of the dilute acid is 1290, I conclude that they intended, and very properly so, that its strength should be similar to that of their former Pharmacopœia, or that it should contain about 40 per cent. of real nitric acid; for it appears by Dr. Ure's table that dilute nitric acid, of density 1291, contains 39·45 per cent.; whether this accuracy, on the part of the College, was the result of calculation, or of experiment, it is unnecessary to inquire; unfortunately, however, it attaches to one only of the two modes of preparation directed, or that in which the pure acid is used; I found the sp. gr. to be 1292.

The directions for using commercial nitric acid and water were probably the result of calculation, and that a wrong

one; for experiment tells a very different tale from that of—"the density of this preparation is 1290."

It is stated by the College that commercial nitric acid has a density of "at least 1380;" that which I employed was of 1381 density. According to Dr. Ure, acid of 1380 contains, as nearly as possible, 53 per cent. of real acid; and let us try, by calculation, what ought to be the density of a mixture of three fluidounces of nitric acid of 1380, and four fluidounces of water. A fluidounce of a liquid, of density 1380, weighs 603·75 grains; three fluidounces, therefore, weigh 1811·25 grs., and, as it contains 53 per cent. of real acid, the three fluidounces contain 960 grains, within a small fraction, and the four fluidounces of water weigh 1750 grains. The weight of the mixture is, therefore, 3561·25 grains; and, as it contains 960 of real acid, it amounts to 26·9 per cent.

Not trusting, however, to calculation, I prepared the diluted acid by mixing three fluidounces of nitric acid, of density 1381, with four fluidounces of water, and I found the sp. gr. of the mixture was 1189·7 instead of 1290, as stated by the College, and, according to Dr. Ure, it contains, as nearly as possible, 26·3 per cent. of real acid, differing only 0·6 per cent. from the above calculation.

Having thus proved my assertion that if the proportions of acid and water above used were the result of calculation, that it must have been an erroneous one, I proceeded to compare the strength of the two dilute acids by experiment.

First, I added a small quantity of water to a fluidounce of that variety of the College dilute nitric acid which is prepared with nitric acid of density 1·5; its sp. gr. as already mentioned, I found to be 1292 instead of 1290, as stated by the College; the difference is quite immaterial. Into this mixture I put a piece of marble, and found, when the action was over, that 209 grains of it had been dissolved. An ounce of the dilute acid weighed 565·25 grains, and, as this dissolved 209 grs., 100, of course, dissolved 36·97 grs., and as 50 of carbonate of lime = 54 of nitric acid, 36·97 = 39·72, the per centage of real nitric acid contained in the nitric acid thus prepared, agreeing almost precisely with the results of calculation.

Secondly, I added a little water to a fluidounce of the College dilute acid,

which had been prepared with acid of sp. gr. 1381; its density, as already stated, was 1189.7, and the weight of a fluid ounce 520.5 grains; it dissolved 127.3 grains of marble. Then $520.5 : 127.3 :: 100 : 24.45$, and as 50 of the carbonate = 54 nitric acid, $24.45 = 26.40$, exceeding by only 0.1 grain the strength as indicated by calculation. It is, therefore, evident, both from calculation and experiment, that the strengths of these varieties of dilute nitric are, by weight, to each other as 100 to 66, and by volume as 100 to 60.

Thus it appears there is a difference of 40 per cent. in the dilute nitric acids prepared according to the two modes directed. In addition to this, I may remark that, at p. 104, in the formula for *Hydrargyri oxidum rubrum*, the dilute nitric acid is directed to be of sp. gr. 1280; this, however, is most probably a mere misprint.

I shall now exhibit an example of the knowledge which the College possess of the power of the dilute nitric acid, by examining their mode of using it in the preparation of

Nitrate of lead.—The formula is as follows:—

“Take of lead, six ounces; diluted nitric acid, six fluidounces; water, six fluidounces. Mix the acid and water, and dissolve the lead with the aid of a gentle heat; concentrate the solution, and set it aside to cool and crystallize.”

Six ounces contain 2880 grains, and this quantity of lead combines with 221 of oxygen to form 3101 grains of protoxide. When a metal is oxidized by nitric acid, and converted into protoxide, an equivalent of the acid, 54, is decomposed into three equivalents of oxygen, 24, which combine with the metal, and one equivalent of nitric oxide, which is evolved in the gaseous state. As then 24 of oxygen require 54 of nitric acid for their production, 221 of oxygen, the quantity required to convert 2880 of lead into protoxide will require 497 grains.

One equivalent (or 112 of oxide of lead) takes for its conversion into nitrate 54 of nitric acid, therefore 3101 grains will require 1495 of the acid for the same purpose, making the whole quantity requisite for oxidizing and combining with the lead 1992 of real nitric acid. I have just shewn that the College have given such directions for the preparation

of dilute nitric acid as to yield it of the density either of 1292 or 1189.7. Supposing, therefore, the operator, in making nitrate of lead, may have chanced to prepare his dilute nitric acid with commercial nitric acid, and, consequently, to have obtained the dilute acid of sp. gr. 1189.7, let us examine how this would have answered his purpose in the quantity directed. I have stated that a fluidounce dissolves 127.3 grains of carbonate of lime = 137.5 of real acid; six fluidounces, therefore, contain 825, of which 497 being required for the oxidization of the lead, there will remain 328 to convert it into nitrate instead of 1495 necessary to produce the effect.

It might indeed be supposed, that it is intended by the College merely that the acid should be saturated with the lead, and that the excess of metal should be rejected; this interpretation cannot, however, for a moment be admitted, for the directions are to “dissolve” the lead in the acid, not to *saturate* the acid with the lead.

Indeed, it will be seen, which I could hardly have suspected would have turned out to be the case before making the calculation, that even supposing the whole quantity of the lead to be presented to the acid already in the state of oxide, it could not be formed into nitrate, for we should have 3101 of oxide, and only 825 of acid, instead of 1495 as required.

The operator being thus disappointed in using the more economical diluted nitric acid, I will suppose that he afterwards employed the more expensive and stronger preparation, obtained by mixing, according to the directions quoted, four fluidounces of nitric acid of density 1500, with six fluidounces of water: with this diluted acid he might reasonably expect to fulfil the mandate of the College; for no one without examination would be justified in arriving at the monstrous conclusion, that though the College had directed diluted nitric acid to be so obtained, as to yield preparations of two very different degrees of strength, neither of them was sufficiently strong to answer the purpose. But let us see how this matter stands: it has been mentioned that the stronger dilute nitric acid of the College has a density of 1292, which agrees very nearly with their statement of 1290, and I will give them the benefit of the difference. Six

ounces of lead, it has been already proved, require 497 of real acid for oxidization and 1495 for combination after it, = 1992 of real nitric acid. A fluid-ounce of nitric acid of 1292, dissolves, as already mentioned, 209 of carbonate of lime, equivalent to 225.7 of real acid, which, multiplied by 6, gives 1354 as the whole quantity of acid contained in the diluted acid employed; so that in this more favourable case it appears that the acid is deficient by no less than 638 out of 1992, or nearly one-third.

After these statements it may be thought quite superfluous to add another word in demonstration of the true nature of the formula for preparing nitrate of lead; but I have not yet done with it. It is well known that lead is oxidized more cheaply and conveniently by the action of heat and air, than that of nitric acid; and knowing this, I am utterly at a loss to conjecture what freak of fancy induced the College to direct the use of the metal instead of litharge. It is employed by them in preparing the acetate and diacetate of lead; and if properly directed in these cases, no objection could possibly arise to it in that of the nitrate.

The expense of the nitric acid is increased by one-third, the operation is much more tedious, and is attended with the formation of a highly disagreeable vapour, which does not occur when litharge is used.

It is ordered that six fluidounces of water should be added to the six fluidounces of dilute nitric acid; and when the lead is dissolved, we are directed to "concentrate the solution, and set it aside to cool and crystallize."

Now as the College direct the whole of the six ounces of lead to be converted into nitrate, we must suppose that there would be formed, in their opinion, 4596 grains of nitrate of lead; and, as according to Berzelius, this salt requires 7.5 times its weight of cold water for solution, 4596 would require 34,470 gr.

Let us, then, examine into the necessity for the concentration of the solution directed by the College. The six fluid ounces of dilute nitric acid, of sp. gr. 1292, weigh 3391 grains, of which 1354 are acid and 2037 water; and this added to the 2625, the weight of the six fluid ounces, give 4662 grains as the whole quantity of water present at the commencement of the operation; so that without making any allowance whatever for the loss of water during the

digestion, we are directed to concentrate a solution already containing more than seven times as much salt as the water is capable of dissolving when cold.

Not trusting, however, to calculation, I put six ounces of lead into the quantities of the stronger dilute nitric acid and water, directed by the College, and heated them in a porcelain vessel for about two hours; of the 2880 grains of lead, 910 remained unacted upon, and consequently 1970 were dissolved. On referring back to what I have stated respecting the solvent power of the dilute nitric acid employed, it will be seen that calculation is confirmed by experiment, quite as nearly as could be reasonably anticipated. I have stated that 1992 of real acid are theoretically required to convert 2880 of lead into nitrate, and I have shown that six fluid ounces of nitric acid, of density 1292, contain only 1354 of real acid. As then, 1992:2880::1354:1957, the quantity of lead which by theory ought to be dissolved; whereas, as above stated, it was 1970 by experiment.

I did not "concentrate" the solution as ordered, but set it aside to crystallize without it, and I readily obtained 1620 grains of the crystallized nitrate, which it will be seen by the quantity of lead dissolved is rather more than one-half of the whole quantity formed, for 104:166::1970:3144, the nitrate actually produced.

In concluding my remarks on this preparation, I think that I am justified in repeating my opinion, that if these directions for preparing nitrate of lead were given theoretically, the calculation was erroneously made; and this is the most favourable supposition that can be offered in excuse for the egregious mistakes which I have exposed; for it is not credible that the College would have ordered lead to be dissolved by a menstruum which experiment had shown them was insufficient to effect it, or that they would have directed evaporation to produce crystallization, if they had found by experiment it would occur without it.

I had prepared the foregoing remarks, and expressed my intention of continuing them, when I was accidentally informed that the President of the Royal College of Physicians of Edinburgh is engaged in editing a Dispensatory. Under these circumstances, I shall at present discontinue my observations,

trusting that some difficulties which have occurred to me, but which I have not yet had time to put to the test of experiment, may receive such explanations in the work alluded to, as may render unnecessary any further interference on my part.

VENEREAL AFFECTIONS OF NOSE.

To the Editor of the Medical Gazette.

SIR,

I HAVE derived much benefit in six cases of obstinate ulceration of the nose, and neighbouring parts, from the daily application of two, three, or four leeches to the gum on the upper jaw. All of these cases had assumed the inveteracy, obstinacy, and other characters, of that destructive process to which the name of lupus has been given. I had derived so much benefit in cases of venereal inflammation and its consequences from this practice, that I was induced to try it in the cases mentioned; and though they had resisted every method I had ever heard of for months, they yielded to the practice mentioned. The first applications brought relief from pain, reduced the redness and livor of surrounding parts, a gradual amelioration ensued, and, in the worst case, the cure was accomplished in forty-eight days, 140 leeches having been applied.

I can, therefore, with great confidence, recommend the above practice in cases of venereal affections either of the soft parts or of the bones of the nose, and, as far as six successful cases authorize me, I would advise the same in cases of lupus.

Of course, none of the measures calculated to improve the general health, or local applications likely to do good, are interfered with, and these should be diligently administered. I have been informed of one case of failure of the remedy proposed; but, before I can attach weight to it, I should wish to be quite sure that it was steadily pursued without a single day's interruption. Sincerely do I hope others may derive that benefit from the measure which has fallen to my lot.

I am, sir,

Your obedient servant,

ALEX. J. HANNAY, M.D.

Surgeon to the Lock Hospital and the Royal Infirmary.

22d April, 1840.

FARCY AND GLANDERS.

To the Editor of the Medical Gazette.

SIR,

THE enclosed remarks, prompted by the perusal of Mr. Brush's cases, are, should you think them worth notice, quite at your service.

Your obedient servant,

WILL. PERCIVALL, M.R.C.S.

Vet. Surgeon, First Life Guards.

Hyde Park Barracks,
May 4, 1840.

So long, so great a debtor, as veterinary science is to human medicine, it would be the height of ingratitude—to say nothing about the philanthropy of the case—in her to withhold any aid, be that ever so slight, she deemed might prove serviceable to her scientific sister. The subjects, farcy and glanders, have occupied the most serious attention of veterinarians from even the commencement of their art. In a former age, Lappose, the celebrated French veterinarian, pursued his inquiry into the nature of these diseases with an ardour which, as he went on, ripened into the warmest zeal, from the circumstance of his having imagined he had discovered a remedy for this opprobrium of his art. His views, however, turned out fallacious; being grounded upon the supposition that he had to combat with but a *local* affection, while in reality it was a *constitutional* one. Sainbel, the first professor appointed at our own Veterinary College, also turned his attention to these subjects; but his career proved too short to enable him to advance them any great deal. In his successor's (Professor Coleman) time, the important facts became developed, that farcy and glanders were the same disease, affecting different parts or tissues; that inoculation with the matter of farcy would produce glanders, and *vice versa*; that farcy had for its seat the skin, glanders the schneiderian membrane; that both consisted in inflammation and suppuration of the superficial order of lymphatics; and that the chain of little abscesses, followed by exulcerations, was owing to the circumstance of the valves of the absorbent vessels (apparently from their comparatively low degree of organization) not taking on the ulcerative action. That both farcy and glanders are contagious diseases admits no longer of doubt; but that

either is communicable, except through direct contact, or inoculation of some sort, we have no facts to prove. Some years ago, these diseases among horses were extremely prevalent; our regiments of cavalry evinced this, as well as other horse establishments, and, indeed, the country at large. But, now-a-days, such is not the case. A better plan of ventilation and training has done much to prevent, and improvement in veterinary medicine has done much to cure, the disease; for be it known, although we do not arrogate the possession of any specific, there are forms and stages in which the disease, in many cases, is curable.

In reference to the cases published by Mr. Brush, there cannot be a question about the ill-fated nurse being contaminated by the knacker; the abrasions upon her hand imbibed the poison; the arm of that hand, and the same side of her body, became the seat of disease. Had not contact, nay, even inoculation taken place, I should say, the poor nurse would have escaped. Veterinary surgeons have no notion of *inhaling* infection from glandered or farcied horses; their only fear is, that some sore or cut upon their hands may meet with the discharge from their patient's nose, or some one of his farcy ulcers. It should therefore be, I take the liberty to recommend it in our hospitals, an affair of extreme caution in those cases, that those in attendance should not subject themselves to the possibility of becoming inoculated. I believe they may breathe the same atmosphere with impunity.

At the commencement of either farcy or glanders, but of the former in particular, we veterinarians find depletive remedies most useful. When a limb is much inflamed and tumefied, and chorde in the course of the absorbents, and sensitively tender to pressure, we are desirous to draw blood and to purge briskly; and in addition, we are often compelled to do what seems irreconcilable with this inflammatory condition of limb, which is, to force the animal to make use of it, by walking exercise. Were it not for the exercise, which is repeated once, sometimes twice a day, experience has taught us, that the tumefaction, and with it, irritation and fever, would augment to a degree even to threaten the animal's life. After we have subdued the inflammatory action and swelling, so that the farcied parts appear to have

become permanently infiltrated and comparatively without feeling or callons, we find most benefit from a combination of tonic with diuretic medicine. The mineral tonics, the sulphates of copper and iron, have proved very serviceable. And last of all, change of air and living, turning out to grass in the summer season, has often completed the cure.

MEDICAL GAZETTE.

Friday, May 8, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."
CICERO.

POOR LAW COMMISSIONERS—

THEIR REPORT TO LORD NORMANBY.

A MISERABLE complaint of the Poor Law Commissioners is now lying before us*. They moan over their extreme unpopularity, and the possible discontinuance of their salaries, and beg most earnestly that their unpopularity may cease, and their wages go on. But we fancy that, as the ancients express it, the gods will grant only one-half of the Commissioners' prayers; they may still continue to draw their comfortable pay, but the dislike to their proceedings will increase in the same proportion that they are understood. The Commissioners, in this their melancholy defence, bear ample testimony to their very remarkable unpopularity. Many of the conductors of the newspaper press, they inform us, are against them; poor-law horrors have been introduced into works of fiction; and inflammatory speeches against the new law have been made at public meetings. The pamphlet entitled "*Marcus on Populousness*," recommending the painless extinction of

* Report of the Poor Law Commissioners to the most noble the Marquis of Normanby, her Majesty's principal Secretary of State for the Home Department, on the continuance of the Poor Law Commission, and on some further amendments of the laws relating to the relief of the poor. With appendices. London, 1840.

children, was attributed to the Commissioners; and they have reason to think that the calumny was “believed by many of the simple and credulous persons to whom it was addressed.” Curiously enough, “the poor-law amendment act, though essentially of a popular tendency, bears outwardly an unpopular appearance*,” and this is the case to so singular a degree, that, if you take the deeds of an Ogre in a child’s story-book, and attribute them to the Commissioners, the tale finds instant credence. Never were philanthropists so misrepresented. Few would have ventured to say of Howard that he intended to throw all the prisoners in England into vaults, like the dungeons reserved in the happy days of Queen Bess for the professors of an unparliamentary creed. To accuse Sir Samuel Romilly of wishing to revive the code of Draco, or Wilberforce of supping on baked negro, would have seemed extravagant; and had it been asserted that the man of Ross designed to set the Wye on fire, the accusation would have been more dangerous to the accusers than to Mr. Kyrle. Not so with the amiable functionaries of Somerset House: nothing is too bad to be believed of them. Just hear their own account in the present volume, reprinted from their second annual report. It is Mr. Gilbert who speaks, in his report on Devon, dated June, 1836.

“Amongst other ridiculous statements circulated, the peasantry fully believed that all the bread was poisoned, and the only cause for giving it instead of money was the facility it afforded for destroying the paupers; that all the children beyond three in a family were to be killed; that all young children and women under eighteen were to be spayed; that if they touched the bread they would instantly drop down dead; and I saw one poor person at North Molton look at a loaf with a strong expression of hunger, and when it was

offered to her, put her hands behind her, and shrink back in fear lest it should touch her. She acknowledged that she had heard of a man who had dropped down dead the moment he touched the bread. It was also believed, that to touch the bread was like ‘taking bounty,’ and the guardians would immediately seize them, kill their children, and imprison their parents.”

This was pretty strong, and certainly confirms what the Commissioners say of the act bearing “outwardly an unpopular appearance.” When the poor people of Devonshire, however, found that the loaves were harmless, and that it was merely workhouse diarrhœa, and not arsenical poisoning, which they had to dread, they rejoiced greatly. “As soon as the intentions of the law were understood, the most riotous submitted, and received the alterations gladly.”

Yet though the apprehensions of poisoning and spaying may have subsided, the belief that the Commissioners are haunted by an insane dread of “surplus population” still prevails; and the disbelief of their intention to relieve the poor is universal. The workhouse is the last asylum of the old and the sickly; and, when the opponents of the act see the pains taken to render this sad refuge utterly intolerable to its friendless inmates, they naturally turn a deaf ear to the self-praises of the Commissioners. But even the supporters of the act would smile sardonically if you asked them whether it was intended to make the indigent more comfortable; and, in their franker moments, would avow, that its chief object was to diminish the rates: while your staunch Malthusian, untaught by the experience of ages, would look forward to the gradual denial of all relief, as a sharp but sure method of “teaching the poor to rely on their own resources,” and forcing them to lay up a provision for age and sickness out of seven shillings a-week.

Hence the unpopularity of the new law bids fair to be permanent; for the

* Report, p. 28.

repugnance of the humane will not be neutralised in its social effect by the cold approbation of the less generous rate-payers. Indeed, in many instances, the householder, though he exults in saving £1. 9s. a-year, will not have much to say in favour of those who have put the money in his pocket. It is a common thing to love the treason, but hate the traitor; and he will think the Commissioners a very shabby set of fellows.

But let us now consider, in detail, a few of the pleas of these prisoners at the bar of public opinion.

They assert that, before the passing of the new act, the amount of the poor-rates had become grievously oppressive in most parts of the country, "and in some places had become nearly intolerable, so as to threaten the abandonment of the land by the proprietors."

If ever there was a *bam*, to speak in Swift's dialect, this was one; but, to do the Commissioners justice, it is not one of their invention. When it is known that a committee is sitting to collect evidence for a particular purpose, evidence is never wanting; and some part of it commonly consists of mere moonshine. The intention of certain proprietors to cut and run, in order to escape the poor-rates, was rich indeed; and, though we recollect it was set forth with great gravity six years ago, we hardly expected to see it revived in a new report.

The next point on which the Commissioners congratulate themselves, is the abolition of the payment of wages out of the rates.

Under the old system, as our readers are aware, a farmer paid a man, suppose seven shillings a-week; and, if the labourer had a large family, perhaps five more were added by the parish, so as to make up a decent subsistence. Still, there were objections to the method; and it was plausibly argued by the economists, that the labourer was degraded

into a pauper, and that his wages would be as high, or higher, if parish aid were withdrawn, and the farmer were obliged to supply the entire subsistence of his labourer. But, alas! it seems fated that Malthusianism is never to prove right in a single instance. The parish aid has been withdrawn, and wages have not risen. In fact, these social problems are so complicated, that no one can tell how they will work till the experiment is tried. The economist reasons ingeniously on his premises; but when his conclusions are falsified by experience, it is found that his premises were insufficient. He has left out one of the moving springs of social life, and his calculation is fit only for the Academy of Laputa. In this particular instance, perhaps, the solution of the difficulty is, that the husbandman is always in so depressed a state, that the farmer can beat down his wages to the lowest point compatible with existence; and he must be defended either by a liberal workhouse, or by an addition to his wages from the common stock. This forms in reality a part of his regular remuneration; and is not considered as degrading. The strongest objection to it is, that those who do not employ labourers pay the farmer's wages for him.

Without a tolerable workhouse, however, as a refuge, the unfortunate husbandman, with his allowance withdrawn, seems in danger of being reduced to barley bread and bare feet, in spite of the generous lessons of the economists, who would teach him, in the cant of the day, to rely on his own resources.

The Commissioners have the face to assert, that "the consequences of this perversion of the natural relations of employer and workman were developed in the agrarian disturbances and fires of 1830 and 1831, &c.;" and they add, that "the causes of evil which we have described have been extinguished." So that the labourer, when he obtained seven shillings wages, plus five shillings

allowance, was irresistibly impelled to rise against his masters; but now that he gets seven shillings, and no allowance, he would not stir—not he—though the Genius of insurrection stood before him, with a pike in one hand, and a torch in the other!

It is allowed by some of the advocates of the new law, that the refusal to give out-door relief to the able-bodied could not possibly be continued during a time of general distress; so that the act would fail precisely at the moment its services were most imperiously required: like Professor Nogo's fire-escape, which, we are assured by Mr. Dickens, was brought wherever it was wanted—the day after the fire!

But even during the present period of comparative prosperity, there are so many of these able-bodied men out of employment, who naturally shrink from incarceration in the workhouse, besides many who belong to the class, just mentioned, of labourers with inadequate wages, that some additional means of support are requisite. Hence, as we learn from the report before us, attempts are constantly made to evade the law, by voluntary rates, highway rates, and by the orders for food given by the union surgeons. In truth, some safety-valves of this kind must be found, or the frame of English society could not stand the pressure. If they were wanting, either the able-bodied must be slowly ground down in workhouses formed expressly, not for the relief of misery, but as a "test of destitution;" or if English manhood refused to submit to this mockery of charity, starvation would appear in a more acute form, and England would be cursed with such scenes as Dr. Alison witnesses in Edinburgh. For instance, he found a young woman "in the last stage of consumption, lying on the floor of a dark room, with a scanty covering of rags, her head resting on a stone. She assured me that she had had no

other resting place for six weeks, and hardly any sustenance, but what had been given her by the poor widow with whom she lived, and who has 9d. a week from the Charity Workhouse. She died there, before I could procure her admission to the Infirmary."*

After this, we cannot sympathize with the Commissioners in their spleen at voluntary rates.

MANAGEMENT OF THE POOR IN SCOTLAND.

To the Editor of the Medical Gazette.

SIR,

I was much gratified (I hope from a better motive than personal vanity) by the notice taken in your journal of my pamphlet, "On the Management of the Poor in Scotland."

The subject has attracted a good deal of attention here; and a pamphlet has been published in opposition to mine, and in defence of the Scottish system, "by David Monypenny, Esq., formerly one of the Senators of the College of Justice," to some of the statements in which I am desirous of drawing the attention of your readers.

The question as to the comparative merits of different modes of providing for the poor, is one which ought to be decided chiefly by comparative observation; and there is, perhaps, no class of men whose observation on the subject can be of so much value as medical men, because there is no other class, equally well-informed and intelligent, who have so many opportunities of observing the *condition and habits* of the lowest class of society in different countries, or parts of this country. Many of your readers must have seen much of the lowest order of people in Edinburgh, particularly when attending dispensaries, and, since then, must have had similar opportunities of observation in English towns, and perhaps in other countries, particularly in Germany; and to them I would beg to address myself.

It is stated in the pamphlet of Mr. Monypenny, (p. 21.) that the opinion of

* On the Management of the Poor in Scotland. 2nd edit., p. 82, note.

the superiority of the Scotch system of management of the poor over that now adopted in England, which I have characterised as a prejudice and delusion of my countrymen, is now "the firm conviction of Englishmen; and, therefore, that the English law is gradually to be administered in the same spirit as ours."

Again, it is stated, (p. 43.) that the "desertion of relatives by relatives," has been introduced into Scotland only by compulsory assessments for the poor; and "only let this measure be extended to all the parishes in the country, and the rates be augmented, and the duty of relatives to the poor with whom they are connected is extinguished for ever."

Now, the questions which I should wish to put to such of your readers as have had opportunities of making such comparative observations as I have mentioned, are these,—

1st, Is it their "firm conviction," that the Scotch system of management of the poor is better than that now in force in England, and that the English system ought gradually to be assimilated to the Scotch; *i. e.* that the workhouses ought to be entirely done away in most parts of the country—all right to relief denied to the able-bodied poor—and the allowances to the aged and infirm, widows and orphans, be reduced to about one-third their present amount?

2dly, Is it consonant to their observation, that among the English poor, in whose favour a compulsory assessment upon the higher orders has been in force for 250 years, the duty of relatives to those with whom they are connected has been thereby extinguished for ever; or even so far weakened, in comparison with that existing in Scotland, as to make it right, for the sake of avoiding such injury to their moral character, to maintain the Scotch system of relief to the poor, under which so many of them habitually undergo the sufferings, and are exposed to the dangers, from fevers and other causes, which I have endeavoured to describe?

I shall feel much obliged by any answers to these queries, addressed either to myself, or to my friend, Dr. Handyside, (10, Shandwick Place,) who is a fellow-labourer with me in this field.—I have the honour to be, sir,

Your very obedient servant,

W. P. ALISON.

Edinburgh, May 2, 1840.

EXAMINERS, LONDON UNIVERSITY.

THOSE Examiners of last year, who were members of the Senate, were re-elected a few weeks since.

Four Examinerships, filled last year by non-senatorial members (*viz.* Messrs. Tweedie, Daniel, Pereira, and Todd) were filled up on Wednesday last (the 6th). Messrs. Daniel and Pereira were re-elected; and Drs. Watson and Sharpey were elected in the room of Drs. Tweedie and Todd.

ACTION FOR LIBEL.

SYME *v.* LIZARS.

MR. SYME, who, our readers are probably aware, is Professor of Clinical Surgery in the University of Edinburgh, recently brought an action for libel against Mr. Lizars, Professor of Surgery in the College of Surgeons. The following is the article complained of, and is contained in Lizars' *System of Surgery*, Part II.:—

"In every operation about the anus, however unimportant it may seem, the operator cannot be too careful in averting hæmorrhage, as many have died from such neglect. This was the fate, indeed, of a respectable apothecary in this city. Nor is it improper, as an additional warning, here to mention another case, which was under the care of our Professor of Clinical Surgery a few years ago. He operated on a gentleman, for a slight fistula in ano; left the part inadequately defended, and dreadful hæmorrhage ensued. The Professor was sent for, arrived, groped about in the anus with his knife, *searching for a needle in a hay rick*—I mean, for a blood-vessel to be tied. Meantime, the life of the patient was saved by *deliquium animi*; but to this day the wound remains unhealed, and the unfortunate man a miserable, nervous invalid, from the excessive loss of blood."

The damages were laid at £1000.

The defence consisted in denying that the passage was false, calumnious, or injurious; or that it was written with the intent of imputing want of skill to Mr. Syme, or with a wish to hurt his good name and reputation. It was then admitted, on the part of the defendant, that he had been misinformed as to Mr. Syme being the party who "groped about" for the vessel; because, though sent for, he was not to be found.

The Lord Justice Clerk summed up, giving an opinion in favour of the prosecutor; to whom the Jury, after retiring for a few minutes, awarded £50 damages.

ROYAL MEDICO-CHIRURGICAL SOCIETY.

April 23th, 1840.

SIR B. C. BRODIE, Bart. in the Chair.

On Severe Injuries of Joints and their Treatment. By RUTHERFORD ALCOCK, Esq. K.C.T.

THE author commenced by shewing that the only information we possessed on so important and complicated a class of injuries was to be found scattered in various medical journals, and chiefly in the works of military surgeons; and that even when all these fragmental data were collected, they were far from furnishing any thing like a complete or comprehensive classification of the various kinds of injuries defined in reference to certain fixed principles of treatment. To supply this was the object in view.

In reference to this class of injuries there not only was the grave consideration of amputation, and the necessity of determining in which cases there was a fair prospect of saving a useful limb, but there were other operative means, such as the excision of the articulating end of a diseased or injured bone, by which a limb might be saved even without all the hazard of the reparative action when the end of the bone was seriously implicated. Cases in which this alternative offered required to be carefully defined.

Many of the general conclusions were founded upon a close analysis of the nature, progress, and results of 96 cases of severe injury to the articulation. Such of those conclusions as were numerical he had thrown into a tabular form, to which he adverted under the following heads:—

Mortality of these injuries in comparison with other kinds, and relative mortality in each articulation.

Comparative frequency of these injuries with those of other parts of the body, and of one articulation.

Causes of mortality in those who died while under treatment for the original injury—those who died after primary or secondary amputation.

From a review of numerical results under these heads, the author passed on to the consideration of particular cases forming types of classes, and the principles of treatment applicable to each. Many highly interesting cases were shortly narrated, proving essential differences between injuries apparently similar in many circumstances, but yet requiring the application of different principles of treatment.

Upon the data of the conclusions drawn from them, the author founded his group-

ing of the injuries into three classes, having reference to certain leading features of treatment.

1st Class, consisting of lacerated wounds external to the capsule. Incised or lacerated wounds penetrating the capsule. Penetrating wounds with abrasion of articulatory surfaces. Simple fractures into joints, with more or less displacement and ligamentous adhesions. Fissuring of articulating surfaces from compound fractures, complete or partial, in the vicinity, but without displacement of bone within the capsule.

In this class are included, those where the great majority of limbs may be saved, and when it should be a principle of practice to attempt it.

2nd Class—Foreign bodies lodged in ends of bones, either not presenting in the articular surface, or on the same level, and smooth. Foreign bodies traversing the ends of bones without detaching fragments. Internal laceration of ligamentous structure, lesion of blood-vessel, with or without temporary displacement of articulatory surfaces.

The second forms an intermediate range between those in which the principle is laid down, that they may be saved, and those in which the contrary rule holds; viz. That the attempt ought not to be made.

These, of all the injuries to joints, most require accurate diagnosis and sound judgment in determining the line of practice, whether to attempt to save, or at once to condemn. The author had succeeded in saving many of these, but it certainly was not always judicious to make the attempt.

In the kind, "Foreign bodies traversing the ends of bones without detaching fragments," an example was presented after the meeting, and examined by many fellows of the society. The author had succeeded in saving a limb, so strong that the man had walked from London to Liverpool. A musket-ball had entered at the inner edge of the patella, fracturing it, and, traversing the internal condyle, came out near the centre of the popliteal space.

3d Class.—Compound fractures into joints, with displacement, and roughened edges. Foreign bodies projecting with articulations, or traversing into extensive injury to structure.

The third class includes those kinds where the principle of practice is to amputate without delay. The injury being of an irremediable character, the system, from the first moment, takes the alarm, and each succeeding hour rapidly diminishes the powers of the patient. He had known only one case (except the hand or foot) recover, where there was fracture into the joint, causing displacement of the roughened edges, and that was of the elbow.

Many valuable preparations were shewn to the society, exemplifying different kinds of injuries to the articulations, and their effects.

PATHOLOGICAL DEPARTMENT.

May 5, 1840.

DR. CLENDINNING IN THE CHAIR.

Pendulous Tumors of the Labium.

MR. CHARLES HAWKINS exhibited a specimen of several pendulous tumors which had been removed from the labium of a female by operation. They were composed of thickened integument and condensed cellular membrane, infiltrated with serum. When cut into, the fluid, with which the cellular membrane was loaded, gradually oozed out, causing the tumors to collapse and be corrugated. They had taken three years to grow, and did not give rise to pain till three weeks ago, when one of them became inflamed, grew harder, and finally ulcerated, discharging a thin ichorous fluid. The pain was of a severe lancinating kind. Upon their being removed at their common base, by the knife, only one vessel required to be tied.

Dr. Clendinning remarked that the tumors appeared to resemble, in structure, the enlarged growths in the same part found in the Hottentot females.

Coagulum in the Femoral Vein.

Mr. Hawkins drew attention to a preparation of clot contained in the right femoral vein. It was removed from a young man who had fallen from a height of fifty-two feet, and suffered fracture of his right thigh-bone. Several ribs were also broken; and he had the symptoms of fracture at the base of the skull. In three days from the accident, mortification was observed to commence in the right lower extremity. It proceeded, and he died from the effects of the mortification, and the other severe injuries. Upon dissection, a firm fibrinous clot was found plugging the right femoral vein near the seat of the fracture.

Mr. E. Wilson observed that it was not the common result of a coagulum filling the principal vein of an extremity for mortification to take place in the limb. He considered that, in the present case, the clot was formed in the vein as a consequence of the mortification produced by the severe injury, as it is invariably found that, when mortification occurs, the blood-vessels become filled with coagulum.

Calcareous Deposit on the Mucous Lining of the Bladder.

Mr. Hawkins placed upon the table some portions of triple phosphate of lime that had formed in layers upon the mucous coat of a diseased bladder. The patient,

twenty-one years of age, had suffered severely for three months preceding his death, in passing his water. Fragments of calculus, like the specimens on the table, were, at various times, passed by the urethra; and these sometimes had to be removed by the forceps, owing to their becoming impacted in the urethra. The only relief he obtained was from injecting his bladder with tepid water. If the catheter used for this purpose was allowed to remain for any time, it became thickly encrusted with calcareous deposit. Upon dissection, extensive disease was discovered both in the bladder and prostate gland, and in the kidneys—more particularly the right. The right kidney was sacculated, and contained a remarkable number of cysts, varying in their size from that of a pea to that of a walnut. The pelvis and infundibula were filled with a thin purulent fluid like a mixture of chalk and water. The ureter was considerably dilated. The left kidney was not so much diseased as the right: it was enlarged—of a red purple colour, approaching to black in some places, thus presenting a contrast with the right, which was of a light brown colour. The bladder was found to be reticulated in its muscular coat, to be greatly thickened, and to have numerous sacculi, formed by the protrusion of the mucous coat between the muscular bands. One of these sacculi was so thin, being lined exteriorly by the peritoneal coat alone, that it burst in the removal of the bladder. The peritoneal coat was observed to be highly inflamed. The prostate gland was much disorganized, its ducts being enlarged to such a degree as to present the appearance of a series of sacculi of different sizes. What attracted principal attention, was finding an extensive deposit of calcareous substance on the mucous coat of the bladder, forming the specimens on the table. When examined carefully, this deposit was seen to be disposed in layers, and to consist of distinct crystals chiefly composed of triple phosphate of lime. There was much ropy mucus, of a bloody colour, in the bladder.

Mr. Perry observed on the acute pain attending cases of calculus formed of the triple phosphate. He related a case that had come under his observation, where the most intense suffering was felt; and, on dissection, three small calculi, composed of triple phosphate of lime, and smooth on their outer surface, were found: the bladder was so free from disease that it might almost be considered healthy. On consultation with Dr. Prout, that gentleman expressed the same opinion as to the severe pain that accompanies the formation of this kind of calculus, even when unattended with much disease in the bladder, or roughness in the calculus itself.

Mr. E. Wilson made some remarks on the mode in which the calcareous substance in question is deposited on the bladder. To illustrate the subject, he gave the description of a dissection which he had recently made. It was in a case of cancer, involving nearly all the parts within the pelvis. A fungoid tumor projected into the bladder, so as to occupy the greater part of its cavity, and completely change the structure of its coats. What he principally begged to draw attention to, was the formation, on the surface of this tumor and the diseased coats of the bladder, of a thick crust of calcareous matter of the nature of triple phosphate. He considered that fibrine or lymph was first thrown out on the surfaces referred to, and that the calcareous substance was deposited within this lymph.

Mr. Hawkins observed, in reference to what Mr. Wilson remarked, that, in the specimens on the table, no appearance could be detected of any nucleus of an animal nature within the layers of calcareous matter.

Mr. Phillips was unprepared for the opinion expressed by Mr. Perry, as to the pain arising from the formation of a triple phosphate of lime calculus being greater than that produced by any other. From the observations he had been enabled to make, when a pupil of the Bristol Infirmary, where, with the exception of Norwich, calculous diseases were perhaps more frequent than in any other town in England, he was led to consider, that no pain could be greater than that occasioned by the mulberry calculus.

Dr. Clendinning remarked, that in regard to the severity of the pain occasioned by a stone in the bladder, two things were to be remembered, independently of the diseased condition of the bladder. First, the degree of pain will be influenced by the mechanical form and structure of the calculus; and, secondly, if the patient's constitution be broken down, he will have a greater susceptibility to suffering.

Dr. H. Lee suggested, that, in considering the question of pain, more importance ought to be given to the condition of the urine. When highly acid, the suffering of the patient was known to be aggravated.

Dr. Hodgkin coincided with many of the remarks that had been made. It appeared to him, that the very form of the mulberry calculus offered an argument against the pain attending its formation being so great as that in the formation of the triple phosphate. When the bladder contracted and emptied itself, in the case of a mulberry calculus, the pain was undoubtedly intense, owing to the inner coat of the bladder being brought into forcible contact with the rough, jagged surface of the stone. But if the bladder were much

inflamed in these cases, and, on account of the irritation caused by the inflammation, contracted for any length of time upon the calculus, it is reasonable to suppose that the surface of the stone would be smooth, instead of being rough and spiculated, as is the case in the mulberry calculus. Hence he considered that the bladder did not contract so habitually and constantly on the mulberry calculus as on that formed of phosphate of lime, which is always smooth on its surface. The latter kind of calculus, unlike the mulberry calculus, depends for its formation on the diseased condition of the coats of the bladder, and not so much upon the peculiar composition of the urine secreted by the kidney: He was further anxious to draw the attention of the society to an interesting circumstance mentioned in the narration of the case. One ureter and one kidney were more changed in their structure than those of the opposite side. What was this owing to? He conjectured, (for it could not be further determined, as we had not the bladder before us), that the disease was greater in the kidney of the right side, in consequence of something obstructing the ureter on that side more than on the left. It may have happened, that a sacculus of the bladder may have been formed in such a situation as to close the orifice of the ureter, where that duct pierces the coats; or a portion of the calcareous deposit may have been lodged in such a manner as to produce the same effect; the passage for the left ureter being comparatively free. He next begged to make a remark on the cysts found within the substance of the kidney that was principally diseased. These cysts, he was led, from frequent examination of them, to regard as dilated tubuli uriniferi. He conceived that they were formed from the tubes in question, being in the first place obstructed some where in their course, from their continuing to secrete a peculiar fluid; and this fluid, by its accumulation, finally distending them into the form of thin sacs. That the fluid found in the cysts is of a bland limpid nature, different from urine, does not militate against the idea here broached. When the ducts of the liver are obstructed; for example by the fungoid tumor so frequently found in that viscus, they become greatly dilated; and the fluid with which they are filled, instead of possessing the characters of true bile, consists merely of a clear serum. A similar change in the nature of the secretion naturally poured out from the gland, he believed, is to be observed in the testis, when the vas deferens is obstructed.

Diseases of the Heart.

Dr. Clendinning exhibited in a preparation, two portions of a heart affected with hypertrophy and disease of the aortic valves. The walls of the left ventricle were

much increased beyond their natural thickness, and the semilunar valves of the aorta were also thickened, so that they did not close perfectly. The patient was the subject of a complication of disorders, some of which were referable to the brain, others to the heart and contents of the thorax generally. Her age was thirty-five. Previous to her becoming Dr. Clendinning's patient, in the Marylebone Infirmary, she was under the care of the late Dr. Sims, between February and August, 1838, for cough, and certain convulsive fits. She was relieved by the treatment; left the Infirmary; but returned, with a recurrence of her complaints, in September 1838; when she was placed under Dr. Clendinning's charge. On examining the head, nothing was found but a preternatural enlargement of the tubercle of the occipital bone, which the patient insisted was the seat of certain uncommon sensations; such as of water flowing in it, and causing it to enlarge and decrease in size. In the chest, the indications of hypertrophy of the heart, combined with valvular disease, were found; together with those of emphysema extensively diffused over the lungs. The limbs were anasarous, and there was dropsical effusion in the abdominal cavity; the urine was albuminous. The fits to which she was subject resembled those of epilepsy in some degree. They varied remarkably in the period of their occurrence; sometimes in one day she had as many as forty distinct attacks. The patient was under Dr. C.'s observation for eighteen months, and she continued to have the fits until three months before her death, which took place in March last, owing to an attack of acute pericarditis.

On dissection, nothing preternatural was found in the brain, except that as a whole, it seemed larger than natural; that is to say, the convolutions met more closely than is usual: and the ventricles had their sides compressed, so as to allow of no fluid between them, and its weight was equal to that of the standard brain in the male sex; presenting, in short, all the characters which Dr. C. recognizes as constituting hypertrophy of the brain. The lungs were emphysematous throughout the greater part of their extent. The condition of the heart has been already described. The kidneys presented the appearances described so admirably by Dr. Bright; one of them exhibiting the structure usually seen in the first stage, and the other the structure belonging to the last stage of the disease, which gives rise to the formation of albuminous urine in cases of anasarca. Dr. Clendinning concluded, by making numerous interesting observations on the principal phenomena noticed in the case; for which we regret we have not space.

EXAMINATIONS AT THE COLLEGE OF PHYSICIANS.

THE Censors of the Royal College of Physicians present their compliments to the Editor of the MEDICAL GAZETTE, and, as they consider it highly desirable that gentlemen, who are about to offer themselves as candidates for the licence of the College should be apprized of the nature of the examinations they will have to undergo, transmit for insertion, in the LONDON MEDICAL GAZETTE, the accompanying papers.

P. MAYO	} Censors.
R. BRIGHT	
G. BURROWS	
R. B. TODD	

FIRST EXAMINATION.

IN PARTE PHYSIOLOGICA.

April 1840.

1. Describe the situation of the heart, in the normal condition, specifying its relations to the walls of, and the other viscera contained in, the thorax.

2. On what does the phenomenon of the arterial pulse depend?—State the average number of beats in a minute in health, in childhood, adult age, and old age; and mention such circumstances as may give rise to variations in the frequency of the pulse.

3. What are the constituents of the blood? Explain what is meant by buffing and cupping of the blood? State the circumstances under which this phenomenon occurs, and account for it?

4. State what you understand by "valvulae conniventes," "Brunner's glands," "Peyer's glands," "glandulae solitariae?"

5. Describe the origin, course, and distribution of the "portio dura" of the seventh pair of nerves.

6. Describe the structure of the kidneys. What are the "corpora Malpighiana?"

7. Enumerate the intrinsic muscles of the larynx. Specify those which close the glottis. Describe the distribution and functions of the superior and inferior laryngeal nerves.

TRANSLATE INTO LATIN.

A'. Αἱ μεταβολαὶ τῶν ὥρων, μάλιστα τίκτους νοσήματα, καὶ ἐν τῇσιν αὐτέσσι ὦρσι αἱ μεγάλαι μεταλλαγαὶ ἢ ψύξης, ἢ θάλλψος, καὶ τάλλα κατὰ λόγῳ οὕτω.

β. Τῶν φύσεων, αἱ μὲν πρὸς θέρους, αἱ δὲ πρὸς χειμῶνα, εὖ ἢ κακῶς πεφύκασι.

γ'. Καὶ τῶν νοῦσαν ἄλλα πρὸς ἄλλας εὖ ἢ κακῶς πεφύκασι καὶ ἡλικίαι τινὲς πρὸς ὥρας, καὶ χώρας, καὶ διαίτας.

δ'. Ἐν τῇσιν ὦρσι, ὅταν τῆς αὐτῆς ἡμέρας, ὅτε μὲν θάλλπς, ὅτε δὲ ψύχος γίνηται, φθινοπωρινὰ τὰ νοσήματα προσδέχεσθαι.—HIPP. Aphor. 1, 2, 3, 4. Sect. iii.

TRANSLATE INTO ENGLISH.

[A passage from Heberden's Comment. p. 321., which lack of space compels us to omit.—ED. GAZ.]

SECOND EXAMINATION.

IN PARTE PATHOLOGICA.

April 1840.

1. Describe the formation of an abscess, and the process by which the pus makes its way to the surface of the body.

2. Contrast the symptoms of phrenitis with those of acute delirium tremens.

3. Describe the symptoms of cynanche trachealis, and the lesions of structure induced by that disease.

4. What are the early symptoms of pericarditis, and those which indicate that the inflammation has terminated in hydrops pericardii?

5. Enumerate the various causes which may induce icterus, and the symptoms occasioned by the passage of biliary calculi.

6. What are the symptoms of intus susception, or stangulation of a portion of intestine?

7. Describe a case of diabetes mellitus. In what fluids of the body may the saccharine matter be detected?

8. Describe scarlatina maligna, and the most frequent sequelæ of that disease.

TRANSLATE INTO LATIN.

[An extract of considerable length, from Thucydides Historia, Lib. ii. 49, which want of space compels us to omit.—ED. GAZ.]

TRANSLATE INTO ENGLISH.

Lucretius, quantum novi, primus dixit lurida fieri quæcunque tumentur arquati; quod etiam omnibus in ore est. Tamen, quos vidi ipse arquatos, uno consensu hoc negarunt, præter duas fœminas, quarum testimonium multa levabant.—*Heberden*, 208.

Lurida præterea fiunt præcunque tumentur

Arquati, quia luroris de corpore eorum
Semina multa fluunt Simulacris obvia
rerum,

Multaque sunt oculis in eorum denique
mista,

Quæ contagæ sua palloribus omnia pin-
gunt.—*Lucretii*, lib. iv. 333.

THIRD EXAMINATION.

IN PARTE THERAPEUTICA.

April, 1840.

1. State the leading indications in scarlatina maligna, and the measures appropriate under each head.

2. State the circumstance under which bark, colchicum, opium, and calomel, are respectively or conjointly indicated in acute rheumatism.

3. State the inducements and objections to puncturing the thorax in presumed empyema or serous effusion.

4. State the treatment indicated in icterus, where there is acute pain in the right hypochondriac region, and obstinate sickness. Describe the appropriate remedies.

5. Describe the measures indicated in pneumonia, when hepatization is presumed to have occurred.

6. State the process which takes place in the formation, according to the Pharmacopœia, of tartaric acid.

7. How is strychnie prepared? What are its uses, and doses?

TRANSLATE INTO LATIN.

[An extract from Aretæus de Epilepsia, and

TRANSLATE INTO ENGLISH.

An extract from Celsus, Lib. iv. on Dysentery, which also we are compelled by lack of space to omit.—ED. GAZ.]

COLLEGE OF PHYSICIANS'
DEGREES.

To the Editor of the Medical Gazette.

SIR,

IN the last number of your journal you have inserted the letter of a correspondent, in which it is asserted that the London College of Physicians "can and do grant the degree and title of Doctor of Medicine to those who pass examinations for licentiates or extra-licentiates, whether they have obtained degrees elsewhere or not; and that the College possess this power by as clear and legal right as any university in the kingdom." Your correspondent has given no reference to the authorities on which this statement is made; and as he has chosen to conceal his name, he will not, of course, expect that his mere *dictum* will satisfy those who feel an interest in knowing the truth. About a year ago it was my intention to submit myself to the examination for the license of the College, and I decided against this step chiefly because I could find no reason for believing that the College possessed a right to confer the title of Doctor. The following extracts from the evidence given by Sir H. Halford, in the year 1834, before the Committee of the House of Commons on Medical Education, seem to me very clearly to imply that the President believed the College had not the power to give degrees. After stating his opinion that there should be in London some authority empowered to grant Medical Degrees, he is asked, *Quest. 314.* "What is the constitution

that you are disposed to recommend for such a board or body, empowered to grant degrees? *Ans.* It appears to me that the best and most effectual of the plans proposed would be to give the College of Physicians the power of granting that medical distinction; for from whatever part of the world persons come, they have no right to practise without the sanction of the College. When the College has granted its license, let it have the power of granting also the title." In his answer to another question of similar import (319), Sir Henry says, that the College, if they choose, may say to an applicant—"We will not expect a degree, but only certificates of attendance on certain lectures; we will then examine you; we will not ask for a degree;" but he adds, "What are we to call him when we have examined him? *We cannot call him Doctor*; though he is from thenceforth M.D. to all intents and purposes." Again, *Quest.* 340. "The effect of the plan proposed (by Sir Henry) would be merely this: that the College should attach the title of *Doctor* to the licentiate whom they examined and approved?" *Ans.* "Precisely."

I believe I have somewhere seen the statement, though I cannot now refer to it, that the College, before this evidence was given, presented a petition to the King in Council, praying for the power to confer degrees, and that the object sought for in that petition was refused.

I am not aware that any additional powers have been given to the College for many years past, and yet, in an address to the profession, dated December 1838, they state that they are willing to do that which Sir Henry has mentioned in one of his answers, viz. to license those who have passed through the course of study prescribed by them, whether they previously possessed degrees or not; and in the face of the President's statement—"We cannot call him Doctor," the College "is prepared to regard in the same light, and address by the same appellation, all who have obtained its diploma, whether they have graduated elsewhere or not." The meaning, rather insinuated than boldly spoken, of this sentence being, of course, that the College will give its licentiates the title of M.D. or Doctor of Medicine, and will authorize them to assume the same.

Having consulted the Charter and Acts of Parliament in virtue of which the College exercises its powers, I can find nothing in them to justify the belief that the privilege of giving degrees was intended to be conferred on the College; and I believe that the College never attempted to exercise such a power, before it became likely that another body in London would be authorized to grant degrees.

As I presume from your insertion of the letter which has suggested these observations, as well as from various notices of this subject which have appeared in your journal, that you think the question here discussed one of some importance for the profession to be accurately informed upon, I trust you will find room for these remarks. If they satisfy those whose interests are concerned, that the College do not possess the powers which they claim, or if they induce some one better acquainted with the subject to show by what authority the College can legally claim such powers, I shall, in either case, be equally contented.

I am, sir,

Your obedient servant,

JOHN TAYLOR, M.D.

Of the University of London.

University College Hospital,
April 23, 1840.

[We have also received another letter on this subject, but, as it is anonymous, we have preferred giving the above.—*ED. GAZ.*]

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, May 5, 1840.

Abscess	3	Inflammation	7
Age and Debility	26	Bowels & Stomach	4
Apoplexy	2	Brain	2
Asthma	4	Lungs and Pleura	10
Childbirth	1	Influenza	1
Consumption	46	Insanity	3
Convulsions	20	Liver, diseased	1
Croup	1	Measles	1
Dentition	4	Mortification	1
Dropsy	3	Paralysis	3
Dropsy in the Brain	4	Rheumatism	3
Epilepsy	1	Scrofula	1
Erysipelas	1	Small-pox	2
Fever	10	Sore Throat & Quinsy	1
Fever, Scarlet	5	Thrush	1
Fever, Typhus	1	Worms	1
Hæmorrhage	2	Unknown Causes	64
Heart, diseased	3		
Hooping Cough	3	Casualties	5

Increase of Burials, as compared with the preceding week } 53

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

April.	THERMOMETER.		BAROMETER.	
	from	39 to 74	30.19 to 30.20	
Wednesday 29		39 73	30.22	30.21
Thursday . 30				
May.				
Friday . . 1		44 65	30.23	30.2
Saturday . 2		41 71	30.21	30.14
Sunday . . 3		39 70	30.10	30.18
Monday . . 4		41 65	30.05	29.98
Tuesday . . 5		39 67	29.87	29.84

Wind on the 29th S.E. in the morning and evening, and N.W. in the afternoon; N.E. on the 30th ult. E. on the 1st inst. and three following days; N.E. on the 5th.

Except the 5th, remarkably clear.

CHARLES HENRY ADAMS.

OF

DRUGS ON SALE IN THE ENGLISH MARKET.

With their Prices and several Duties.

(From the Official Returns, May 5, 1840.)

	PRICE.		DUTY.	DUTY PAID.	
	£	s. d.		In 1839 to last week.	Same time last year.
Aloes, Barbadoes, D.P. c	15	0 0 to 30 0 0	} B.P. lb 0 2 } F. lb 0 8 }	30,779	40,134
Hepatic (dry) BD. c	5	0 0			
Cape, BD. c	1	15 0			
Anise, Oil of, German, D.P. lb	0	5 0	F. lb 1 4	521	—
E. I. lb	1	10 0	E. I. 1 4	382	711
Asafoetida, B.D. c	0	1 0	c 6 0	39	15
Balsam, Canada, D.P. lb	0	1 0	lb 0 1	2,887	1,619
Copaiba, BD. lb	0	1 6	c 4 0	313	225
Peru, BD. lb	0	4 6	lb 1 0	123	508
Benzoin (best) BD. c	25	0 0	c 4 0	21	48
Camphor, unrefined, BD. c	28	0 0	c 1 0	158	172
Cantharides, D.P. lb	6	3 6	lb 1 0	6,834	7,164
Caraway, Oil of, D.P. lb	0	9 0	lb 4 0	931	190
Cascarilla or Eleutheria Bark, D.R.C. lb	3	10 0	lb 0 1	1,915	48
Cassia, Oil of, BD. lb	0	8 6	lb 1 4	1,057	1,145
Castor Oil, East India, BD. lb	0	0 4	c 1 3	2,722	2,776
West I. (bottle) D.P. 1½ lb	—	—	—	—	—
Castoreum, American lb	0	17 0	} lb 0 6	298	467
D.P. Hudson's Bay lb	0	18 0			
Russian lb	—	—			
Catechu, BD. Pale c	1	1 6	} c 1 0	26,296	13,844
Dark c	1	8 0			
Cinchona Bark, Pale (Crown) lb	0	2 0			
BD. Red lb	0	2 0	} lb 0 1	21,235	24,345
Yellow lb	0	4 0			
Colocynth, Turkey lb	0	1 6			
D.P. Mogadore lb	0	1 0	} lb 0 2	2,528	4,336
Calumba Root, BD. c	0	12 0			
Cubebs, BD. c	3	0 0			
Gamboge, BD. c	5	0 0	lb 0 6	3,697	6,324
Gentian, D.P. c	1	10 0	c 4 0	18,366	21,692
Guaiacum, D.P. lb	0	1 0	c 4 0	22	25
Gum Arabic, Turkey, fine, D.P. c	12	0 0	c 6 0	181	298
Do. seconds, D.P. c	7	0 0	} c 6 0	3,445	3,470
Barbary, brown, BD. c	1	17 0			
Do. white, D.P. c	5	10 0			
E. I. fine yellow, BD. c	2	5 0	} c 6 0	1,535	2,858
Do. dark brown, B.D. c	1	15 0			
Senegal garblings, D.P. c	3	0 0			
Tragacanth, D.P. c	8	0 0	c 6 0	8,240	8,889
Iceland Moss (Lichen), D.P. lb	0	0 2½	c 6 0	74	22
Ipecacuanha Root, B.D. lb	0	1 3	lb 0 1	1,925	2,789
Jalap, BD. lb	0	2 6	lb 1 0	2,961	3,437
Manna, flaky, BD. lb	0	3 0	lb 0 6	16,665	13,048
Sicilian, BD. lb	—	—	} lb 0 3	5,458	5,257
Musk, China, BD. oz	1	0 0			
Myrrh, East India, BD. c	5	0 0			
Turkey, BD. c	2	0 0	oz 6 0	745	848
Nux Vomica, BD. lb	0	8 0	c 6 0	85	110
Opium, Turkey, BD. lb	0	9 0	lb 2 6	136	—
Peppermint, Oil of, F. BD. lb	0	9 0	lb 1 0	16,067	14,416
Quicksilver, BD. lb	0	10 0	lb 4 0	2,408	671
Rhubarb, East India, BD. lb	0	3 11	lb 0 1	127,463	87,740
Dutch, trimmed, D.P. lb	0	6 0	lb 1 0	4,352	13,478
Russian, BD. lb	0	8 0	} F. lb 1 0	10,213	1,421
Saffron, French, BD. lb	0	7 6			
Spanish lb	0	7 6			
Sarsaparilla, Honduras, BD. lb	1	0 0	} lb 1 0	971	1,323
Lisbon, BD. lb	0	1 0			
Scammony, Smyrna, D.P. lb	0	1 0			
Aleppo lb	0	2 0	} lb 0 6	52,827	46,443
Senna, East India, BD. lb	0	1 0			
Alexandria, D.P. lb	0	2 0			
Smyrna, D.P. lb	0	1 6	} lb 2 6	6,045	4,076
Tripoli, D.P. lb	0	1 0			
—	0	1 0			
—	0	1 0	E.I. lb 0 6	38,082	4,394
—	0	1 0	Other sorts 0 6	26,357	32,898

‡§† BD. In Bond.—c. Cwt.—B. P. British Possessions.—F. Foreign.—D. P. Duty paid.

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LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

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DISEASES OF FIBROUS TISSUES.—*Inflammation of the Periosteum—Nature—Symptoms—Varieties—Treatment.*—DISEASES AND INJURIES OF OSSEOUS TISSUES.—*Wounds of Bone—Fractures—Nature—Varieties—Symptoms—Prognosis.*

PERIOSTITIS.

INFLAMMATION of the periosteum is a disease of more frequent occurrence than is generally supposed. I believe that many cases of severe deep-seated pain, deemed rheumatismal, might with more propriety be referred to inflammation of the periosteum. The disease may be acute or chronic, may end in suppuration, (and this is the severest form, as is well exemplified in certain cases of paronychia,) or in the deposition of cartilage or bone.

It may be occasioned by a great variety of causes; contusions, local irritation from contiguity of ulcers, wounds, operations in which the periosteum is implicated, amputations for example, fractures, deep-seated phlegmonous inflammation; all these affections or injuries may determine the development of periostitis; but these exciting causes seem to act with as much more certainty as the system may be impregnated with scrofula or syphilis.

Whatever may be the cause of periostitis, it is manifested externally by very similar symptoms, the variety depending upon the kind of inflammatory action, whether acute, chronic, or suppurative. If the inflammation be limited to the thickening of the periosteum or to the deposition of cartilaginous or bony matter, the symptoms are often very mild, but when it ends in

suppuration, they are often extremely severe. Insensible in the healthy state, it acquires, when inflamed, a very acute sensibility; and this is more particularly marked when suppuration has set in. On the one hand the bone resists, on the other the periosteum does not yield, and the agony the patient experiences is intense.

At first the severity of the pain is variable, usually the most severe at night; there is slight tumefaction, puffiness or œdema; the tumor increases, and assumes an elastic or doughy feel. As the pain becomes severe, violent sympathetic disturbance is often excited, and this is as much more intense as the part affected is nearer the brain.

Anatomically considered, it may be divided into stages. In a first, the membrane is more or less richly injected; it is thickened, infiltrated with serosity, and is less adherent, than in its healthy state, to the surface of the bone. Generally the adjoining cellular tissue and soft parts participate in this state of injection and infiltration. This appearance is usually seen when chronic ulcers or old cicatrices are in its immediate vicinity. In another stage the periosteum is thicker and denser, of a red colour, and much increased sensibility. This is its condition during the formation of callus, and the regeneration of necrosed bone. Then also the periosteum is evidently injected, tumid, and bathed in a gelatinous reddish fluid, susceptible of coagulation, and of undergoing organic changes. Still further we arrive at a condition destined to produce organized matter; we see it form a new osseous tissue, which incrusts, as it were, the primary tissue, so as to form a species of osseous vegetation. If in this stage, the disease becomes chronic, the thickened periosteum is more dense, and may assume a coriaceous or ligamentous character. Its adhesion to the bone at this time is very strong, and when we detach it, we perceive at its surface longitudinal furrows, which give to its cortical substance a fibrous appearance

similar to that of the bones of the fœtus. If the inflammatory action become more intense, the periosteum is more thickened, and assumes somewhat the appearance of a mucous membrane. It is thus we find it when it is in contact with an abscess, or when there is pus between it and a bone. Under these circumstances its nature and functions are changed; instead of furnishing a plastic organisable lymph, it secretes a peccant matter capable of injuring parts with which it is in contact. As the disease proceeds, the bone suffers, and becomes carious or necrosed; the periosteum is softened, and ultimately destroyed.

In the Dublin Hospital Reports, vol. i., page 331, Crampton describes the case of a lad of fourteen, attacked with erysipelas of the nose, and who died on the twelfth day from the attack, with symptoms of inflammation of the brain. The examination after death showed the periosteum covering the nasal and frontal bones thicker than usual, and of a deep red colour; it was separated from these bones as well as those of the orbit, a greenish peccant matter being found between it and the bones. The brain was injected, and a part of the pia mater was in a state of suppuration, at a point precisely corresponding to that where the dura mater was thick and livid.

In the next form, the disease rarely determines such fatal accidents, however severe the pain which accompanies it may be, because it occasions a change of tissue or a new product. A woman of 32 was struck with a boot-hook on the left side of the head, which produced a momentary stunning sensation; the soft parts had not been much hurt, and her health was not interfered with. Six weeks after the accident a small painful tumor was developed at the spot; the pain gradually increased, and was accompanied by headache, nausea, and sleeplessness. After some time, an epileptic attack occurred, which was followed by paralysis of the right arm, and a defective articulation. Six months after the accident she was admitted into the hospital, complaining of pain at the right side of the head; the countenance bore evident marks of suffering; the right arm was atrophied, and the fingers spasmodically contracted; station was almost impossible, speech was difficult, the stomach rejected food, and the bowels were obstinately constipated. A second epileptic attack occurred on the day of her arrival at the hospital. The centre of the left parietal bone presented a tumor of the size of a small walnut, hard at its circumference, soft and elastic at its centre, and pierced by a small opening which admitted a sound to pass to the bone. An incision was made, and it was discovered that the tumor was formed by the pericranium, which was changed into a very vascular,

extremely sensible, fibrous tissue, firmly adherent to the bone. A crown of a trepan was applied; the piece of bone removed was rough, and the dura mater bled freely. Nine days passed in paroxysms of delirium, coma, and convulsions. Erysipelatous inflammation followed, with copious suppuration, and exfoliation of a portion of dura mater. The patient got quite well, having recovered the use of her right arm. Now if, instead of altering the pericranium and the bone, the inflammation had been suppurative, the consequences would probably have been fatal.

There are regions of the body subject to fewer accidents when they are the seat of periostitis; such is particularly the internal surface of the tibia. Crampton mentions many curious observations of this kind. A young man of 25 had severe pain along the internal surface of the tibia, without tumefaction or change of colour of the skin; he had besides intermittent fever. Three longitudinal incisions were successively made along the painful parts, and down to the bone. The pain, which had been momentarily lessened by the first two, did not entirely disappear until after the third was made. The periosteum was a quarter of an inch thick, of the consistency of cartilage, and extremely sensible. In a second case, a woman of 25 had on the right tibia, two inches above the ankle, a very painful tumor three inches long, soft and elastic, the colour of the skin unchanged, but with a slight subcutaneous serous infiltration. Repeated applications of leeches weakened the patient, without procuring the slightest relief. Incision down to the bone radically cured the disease; the periosteum was thick, and similar to a ligamentous expansion.

A fourth and equally instructive case is that of a young man of 26, who presented an extremely painful, ill-circumscribed tumor, on the inner side of the tibia. The patient, who had had no sleep for twelve nights, said, he had suffered similar pain, at the same point, two years before, for which leeches and blisters had been used, without relief. A caustic issue had given him some relief, but the pain was not dissipated until the escape of a small spicula of bone. An incision, three inches long, was now made, penetrating to the bone, and occasioning a good deal of pain. The hæmorrhage was considerable; but, during the night, the pain ceased, and the patient was soon cured. The next year the same leg was affected lower down; the same treatment was followed by complete success. Now, in neither of those three cases was there any trace of purulent matter either above or below the periosteum.

SYPHILITIC PERIOSTITIS.

The most frequent cause of periostitis is, I apprehend, syphilis. It begins by obtuse

periodical pains, which have this peculiarity, that they are generally very distressing at the break of day. The affected parts are very sensible upon pressure, even when a bone is deep-seated. After a time the patient gets little or no sleep, becomes emaciated; the pulse is small and frequent, depending less, perhaps, on fever, than on nervous irritation.

If, after death, we examine the affected bone, we find the periosteum thick and vascular; the surface of the corresponding bone has no longer that smooth, bluish aspect, which is so characteristic of it in its natural condition, but is unequal, and slightly spongy. Nothing, however, is extravasated between the membrane and the bone, and they are perfectly adherent the one to the other. If we dry the bone, it will be found to present points where the natural appearance and colour are lost, and where dark, alternate with light spots.

Whether the disease has originated in the bone or the periosteum I shall not stop long to inquire. Hunter thought the bone first suffered; but if we attend to the seat of the pains, and the organic changes which occur in the membrane, I think we shall come to the conclusion that the periosteum is the first implicated.

When the pericranium is the seat of the disease in syphilitic patients, it is marked by certain peculiarities. It is sometimes extremely transient. The patient, when he awakes, feels certain inequalities, superficial bumps, painful to the touch, and sometimes accompanied with circumscribed redness. At other times the disease proceeds more slowly, is more obstinate, and occupies a greater extent of the cranial surface. In some cases the pericranium has been found thickened down to the foramina, through which the nerves pass, exercising compression upon them, and producing pain or paralysis in the parts where they are distributed. This state of the cranium is not, however, always the result of a syphilitic infection.

There is a condition of the periosteum, probably of an inflammatory nature, under the influence of which certain tumors are developed. These tumors differ in their consistence, their nature, their origin, their progress, and termination. Some are formed of a thick syrupy fluid; others are hard and cartilaginous; others very apt to ulcerate; others disposed to soften.

Nodes are hard, ill circumscribed tumors, seated particularly upon those bony surfaces which are very superficial, such as the cranium and the tibia; still they are observed also at the bones of the elbow, the ribs, the clavicle, the fore-arm. In size, they vary from that of a cherry-stone to that of a walnut, or even of a hen's egg. In many cases their contents are not un-

like, in colour and consistency, to the pulp of red gooseberries. Their seat is either the periosteal tissue, or between it and the bone, the surface of which commonly remains smooth. Each of these tumors is exactly circumscribed; and, when there are many on the same bone, as sometimes happens in the cranium, they are not confluent, however near to each other they may be. In these cases the periosteum does not present any considerable change of texture or colour; the cellular tissue, external to it, is a little infiltrated with serosity. The extravasated fluid is tasteless and inodorous, and has no acrid character. As to the symptoms which ordinarily accompany these tumors, they are usually preceded by more or less acute fixed pain, most severely felt during the night. For this, a reason is not easily assigned.

Another form of this affection is presented, distinguished by the hardness of the tumor. At first fibrous, it degenerates into a fibro-cartilaginous, and afterwards into an osseous tissue. If we divide with a saw a bone so affected, an osseous reticular mass is found to be developed between the periosteum and the bone, and adherent to both. This affection, to which Sir A. Cooper applied the term cartilaginous periosteal exostosis, is particularly developed in long bones, especially along the inner border of the femur, and that of the tibia. It increases slowly, and is not accompanied by violent pain. It seems probable, that it is caused rather by external violence, than by constitutional means. Though this condition may not be malignant, it may remain during life completely indolent.

There is a third species, which consists in a fleshy tumor, developed in the substance of the periosteum. In size it is variable; in consistency not unlike the prostate gland; homogeneous, and for a short time indolent. If inflammation set in, and the skin quickly participate, they become quickly adherent, inflame together, an abscess is formed, spontaneously opened at several points, and a moderate quantity of pus escapes, but the tumor does not lessen.

Another variety exists, in which the periosteum and the cellular tissue, which corresponds to its external surface, are transformed into a homogeneous, whitish, or greyish, tolerably compact substance, a section of which resembles an inflamed lymphatic gland. This substance may soften, become vascular, and ultimately degenerate into medullary matter. It is this variety to which Sir A. Cooper has given the name fungous periosteal exostosis, and which he describes as a lobular tumor, composed of a white elastic substance, alternating with a softer and more vascular portion. He believes it to possess malign-

nity, since it is seen in persons whose constitution is bad, increases rapidly, and is accompanied with pains which coincide with the progress of the disease. A very slight examination suffices to recognise essential differences between these four species of periostosis. The first consists in a simple collection of a viscous fluid, without change in the parts with which it is in contact; the second is a fibro-cartilaginous tumor, degenerating into an osseous tumor, and gradually identifying itself with the bone; the third is a mass susceptible of ulcerating; the fourth is a substance at first dense, but degenerating into medullary matter.

Treatment.—In the treatment of uncomplicated acute periostitis very energetic means must be employed. Local and general bleeding frequently repeated, and counter-irritation, with absolute rest, must form a principal feature. As the acute symptoms abate, mercurial and iodide remedies will be found useful; but, in a great majority of cases, more relief will be derived from freely laying open the part than from any other means; and this is so much more easily done, as the affected bone is in the greater number of cases superficially placed. I speak here of cases in which we have no reason to believe that any syphilitic contamination exists; where the disease is complicated with syphilis, we shall speak of its treatment hereafter.

INJURIES OF BONES.

Wounds.—In speaking of the soft parts, the word wound signified all kinds of solution of continuity produced by external causes; but, in speaking of bones, we use it in a more restrained sense: we then apply the term to a solution of continuity produced by a cutting instrument. We apply the term fracture to solutions of continuity produced by rupture.

It is in the bones of the cranium that wounds are most frequently seen. Not many weeks ago I saw a case where, by a blow made with the edge of a flat iron, a fair incision was made in the external table of a man's skull to the extent of an inch and a half; the lips of the wound were not sensibly depressed. From analogy we might say that wounds of bone, produced by a cutting instrument, would unite much more easily than a fracture. Lamotte mentions a case where a sabre-cut completely divided the inferior part of the ulna, and where the wound was, he thought, twice as long in healing as a compound fracture would have been. A cutting instrument almost always produces a certain quantity of contusion to the bone, the periosteum is more or less injured, and partial caries or necrosis may happen. Lamotte certainly exaggerates

the inconvenience of such injuries—a finger fairly cut off will completely unite in a comparatively short time.

Union should certainly be attempted when the parts are held together by a moderate flap. Lafaye, in his notes to the operations of Dionis, says that Lapeyronie had to treat a man who, with a blow of an axe, had his arm cut through, with the exception of a portion of the soft parts which contained the principal vessels: he attempted to save the limb, and succeeded. Stevenson succeeded in uniting an arm which had been almost completely separated by a sabre cut. In that case not only the bone, but the biceps muscle and the artery, had been divided (Edinburgh Med. and Surg. Journal, July 1837.) Indeed, with respect to the power of nature to repair injuries of this kind, it is difficult to place limits. We must not heedlessly reject the marvellous, because between established fact and convicted fiction there is much to be gleaned. I should have a difficulty, for instance, in admitting as fact a case narrated by Job a Meckren. A nobleman had a part of his skull sliced off by a cutting instrument; the bone was not forthcoming, and the surgeon imagined that he could borrow a piece from a dog's head which might answer the purpose of an obturator. The poor dog had to submit to the operation necessary to procure a piece of cranium of the proper size: it was applied upon the noble's head, and perfectly united. The priests of the time, scandalized by seeing on the head of a Christian a portion of the skull of a dog, excommunicated the unfortunate gentleman for the purpose of compelling him to purge himself of the scandal which had been done. Still this circumstance loses much of its marvellous character when we recollect the graftings and transplantings of Hunter—the experiments of Merrem and of Walther, who removed discs of the cranium which were replaced and united by bony matter. In 1802, Maunoir proposed to replace the discs which had been removed by the trepan for the purpose of evacuating fluids. This was objected to because it was alleged that these discs continued to be foreign bodies which did not enter into organic union. Walther opposed to this the following fact:—one of these discs was replaced in the point from which it had been taken, the external table of this disc exfoliated, and exposed the inner table covered with granulations—a conclusive proof that organic relations had been established. A bone perpendicularly and completely cut through is susceptible of union without exfoliation, provided the soft parts which surround it are brought together and preserved from

suppuration. But these injuries, when considerable, must be treated like fractures by such an apparatus as will most effectually preserve the part from motion.

Whatever may be the direction of the wound, it remains for a time in the condition in which it is left by the instrument; there is no elasticity or immediate tumefaction, as in the soft parts, by which the edges are approximated. When a piece is fairly cut out with the soft parts, as in certain sword-wounds, the wound must be dressed like an ordinary wound with loss of substance, unless so fairly or recently cut as to admit of being brought into immediate apposition.

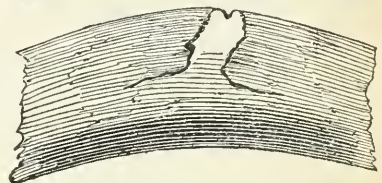
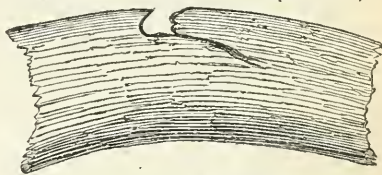
FRACTURES.

A fracture is a partial or complete destruction of continuity in a bone by rupture; and it is an accident which, from the frequency of its occurrence, the varieties which it presents, the serious symptoms which it sometimes excites, the complications by which it is often attended, and the general efficacy of well-directed modes of treatment, demands our most serious attention. As might naturally be expected, fractures are more frequent in long than in short or flat bones. Those long bones which form the great levers of locomotion, and which are destined to sustain considerable exertions, are most frequently the seat of fracture. Though a fracture may occur at any point in the continuity of a bone, the middle, which is at the same time the thinnest part, is most exposed to it. A bone may be fractured at more than one point; this is often the case in the ribs.

Varieties.—Much variety exists in the nomenclature of fractures. Thus, in France, a *simple* fracture affects only one bone without much injury to the soft parts. A *compound* fracture exists when two bones composing a limb are fractured, or when one is fractured at more than one point. When there are many fragments, it is termed a *comminuted* fracture. When it is accompanied by other diseases or injuries which render the treatment long or difficult, it is termed a *compound* fracture. In England, we follow a somewhat different course. We are satisfied to make two great classes—the *simple* and the *compound*. By a *simple* fracture we understand a destruction of continuity of a bone without any external wound to form a communication between the fractured bone and the exterior. By a *compound* fracture we understand a similar injury to the bone, but accompanied by such a destruction of the soft parts as will establish the communication which was wanting in the former class. We use still other terms of

distinction. We call a fracture *complicated* when it is accompanied by some other disease or injury which may complicate the treatment.

Although Boyer rejected the idea, yet there can, I think, be no doubt that the opinion of Meding, Chelius, Marjolin, and Campagna, is correct. They maintain that a fracture may be incomplete; that it may affect one side of a bone and not the other. The accompanying sketch, taken from a specimen in the museum of the faculty at Paris, is conclusive as to the occasional occurrence. It is produced, I



apprehend, in the same way that such an appearance may be produced in a hazel stick by bending it over the knee: bending is unquestionably necessary for its production, and, therefore, it is most likely to happen in children or young persons. Again, a bone may be fractured *transversely*, or *obliquely*, or even *longitudinally*. Duverney mentions three such cases. Petit and Louis seem to deny the possibility, because, they say, no blow is capable of fracturing a bone in this direction. Nevertheless, it is not an uncommon accident as a consequence of gun-shot, nor, indeed, from other causes. Thus, in a fall from a height, the head of the tibia may act the part of a wedge, and split up the femur between the two condyles. Such a case is mentioned by Cloquet, in which the fracture extended to the lesser trochanter. In 1800, Leveille amputated, at Marengo, the leg of an Austrian soldier, in whom there was a longitudinal fracture, extending from the lower third of the tibia to the knee-joint. Samuel Cooper and Cole mention several similar cases from gun-shot.

Causes.—A fracture may be produced by the application of violence directly upon the point or at a distance: but there are many circumstances which seem to predispose to it. Thus the situation of certain bones, and the functions they fill, more particularly expose them to fracture. The

radius, which supports the hand, is more frequently fractured than the ulna; the clavicle, which supports the arm in the motions upon the trunk, frequently suffers. Again: age, by lessening the proportion of the animal to the earthy matter, increases the fragility, and causes a greater frequency of fracture in age than in youth. Still it is not this circumstance alone which explains the greater frequency of fractures at this period of life: the muscular system is enfeebled, their step is less assured, and falls more frequent. That certain diseases cause fragility is unquestionable: among these we usually rank cancer, syphilis, scorbutus, gout. Benjamin Bell and Meckren mention cases where, in persons affected with syphilis, muscular action alone has served to cause fracture. As evidence of the influence of gout, Fabricius Hildanus mentions the case of a person, aged 60, who broke his arm in putting on his glove; but the details shew that there was also caries. The influence of cancer is better established. Desault, Louis, Cooper, mention cases of this kind. I think, however, that the effect is

most decidedly shewn in those bones most directly connected with a carcinomatous deposition. Rickets sometimes renders the bones more fragile, at others more elastic. We have seen cases where fractures occurred under the slightest causes. Esquirol has the skeleton of a woman who was a martyr to rachitis, in which nearly every bone is covered with traces of fracture; altogether they amount to more than 200. Scorbutus is also a predisposing cause; and in all these cases, the predisposing cause indisposes the fractured bones to unite. Many men have maintained the opinion, that bones are more brittle in cold than in warm weather: among others, A. Paré maintained this doctrine. In the present day, this idea is not so prevalent. That fractures are more frequent in winter than in summer, is perfectly true, but then falls are so also.

As we happen to have the register of 2328 cases of fracture admitted into the Hôtel-Dieu, furnished by Malgaigne, we will endeavour to ascertain the correctness of that and other opinions with respect to fractures.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1806 8 ...	49	37	45	32	42	55	37	51	41	43	52	62
1830-33 ...	127	63	72	70	53	70	67	65	55	74	66	74
1834-37 ...	96	76	74	87	76	96	81	69	59	83	78	92
Total ...	272	176	191	189	171	221	185	185	155	200	196	228

If we divide the year into four quarters we get the following results:—

	1st Qr.	2d Qr.	3d Qr.	4th Qr.
1806 8	131	129	129	157
1830-33	262	193	187	214
1834-7	246	259	209	253
Total...	639	571	525	624

If we divide the year into three sections of four months each, we find—

	Dec. to March.	April to July.	August to Nov.
1806 8	193	166	187
1830-3	336	260	260
1834-7	338	332	289
Total...	867	758	735

The last table is most favourable to the influence of cold; and yet, if we take the four most wintery months, we see that the preponderance over those of spring is not more than an eighth, and even this is inconsistent, for if we take the four winter months of 1806-8, it scarcely exceeds those of autumn; and if we take the months of each season, January is, in one

case, inferior to June, once equal, and once superior; February is constantly inferior to June, and October and March are almost in the same situation. It is found, that though, as a general rule, a greater number of fractures occur in winter than summer, yet, three times in eleven years, the contrary has occurred.

The next questions to be considered here, are, why are fractures more frequent in winter than in summer—why is the preponderance so small, and why occasionally is the preponderance the other way? I think there can be no doubt that the greater frequency is owing to the greater frequency of falls, and not to any influence of the rigour of the season upon the fragility of bones.

Now as to age, if we divide life into periods of five years, and use the same registers, and seek for that in which fractures are the most frequent, bearing in mind that the registration does not include the two extremes of life, children below the age of two years not being admissible, and the cases of fracture above eighty being so very few, we shall find that the disposition to fractures is feeble from two to

five years; increases from five to fifteen; so that the third period more than triples the first, the fourth triples the third, and the increase during the long period comprised between twenty-five and sixty, is only a fourth: from sixty to seventy the decrease is a fourth; a third from seventy to seventy-five, and a half from seventy-five to eighty; from eighty to eighty-five scarcely exceeds the first period. The age of predilection, as it were, is from twenty-five to sixty, a period of thirty-five years, or the half of life; it furnishes 1448 out of 2376 fractures, leaving only 888 for the other half. To be complete, however, it would be necessary to shew not only the proportion of fractures occurring in individuals of a given age, but what proportion the people of that age bear to the whole population. Now supposing we take 1,000,000 as the population, among whom the 2328 fractures occurred; we find that from 5 to 10 they are, comparatively, excessively rare; that the predisposition goes on increasing with age, not only from 15 to 25 and from 25 to 60, but every five years of that vast period, in fact, year by year up to 60; so that these two periods, from 25 to 30 and from 55 to 60, give nearly an equal number of fractures. Beyond 60, a very remarkable and an unexpected result appears: the proportion of fractures diminishes relatively to the population. The proportion

between 65 and 70 does really increase, but still not materially, because, for all practical purposes, the proportion is nearly the same from 55 to 80, whilst up to 55 it almost progressively increases. Above 80, the predisposition would seem, according to our returns, to diminish; but this may be only apparent, for, beyond 79, old people in Paris have a right to enter the two hospices, and the proportion entering the Hôtel-Dieu might naturally expect to be lessened. We may, therefore, sum up as follows:—We have little information about the two first years of life; frequent between 2 and 4; less so between 4 and 6; increase becoming tripled about 15; at 25 increased by a fourth, and continuing nearly the same up to 60, in spite of the annual decrease of the population. Between 55 and 80, the absolute number of fractures diminishes nearly in the same proportion as the population. Between the ages of 2 and 80, from 4 to 5 is the period when fractures are most unfrequent; from 55 to 70 most frequent.

We also find in inquiring what are the ages which furnish the greater number of fractures at particular seasons, supposing we divide the year into two periods, one comprising November, December, January, February, and March, the other May, June, July, August, September, and October, that in eleven years the following numbers are yielded:—

	2 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60,	and above.
Winter.	47	126	224	208	225	422	8
Summer.	66	163	222	207	188	272	8

Thus we see that from 2 to 25 the proportion has been greatest in summer; from 25 to 45 it has varied, being sometimes greater in winter, sometimes in summer, being in mass nearly equal. From 55 to 70, summer has constantly yielded the smaller number of fractures, and the difference is so great that the preponderance in favour of winter is nearly half. This increase in winter is manifested from the age of 45, and it is from this period that anatomists have commonly dated the period of absorption.

As to sex, men are more subject to fractures than women; from my general total, I find 1679 to 680, or about $2\frac{1}{2}$ to 1, or 5 men to 2 women. Before 5, the female sex furnishes a greater number of cases than the male, but the proportion of males goes on increasing until between 15 and 20, when the preponderance in favour of the male is as 7 to 1; from thence it decreases until between 67 and 75, when the numbers are as nearly equal, and between 75 and 90 the preponderance is in favour of the female, nearly in the proportion of 2 to 1. Thus, at the two extremes of life,

the number of fractures is greater in woman than man.

The right limbs are fractured more frequently than the left by nearly a fourth. Out of the total of 2328 cases, 399 affected the trunk, 925 the superior extremities, 1024 the inferior.

In the Calcutta Quarterly Medical Journal, for January 1838, is a report by Mr. Martin, of 1572 cases, of which 193 affected the trunk, 680 the superior, and 699 the inferior extremities. Mr. Lonsdale, in his work on Fractures, gives the general results of 1901 cases of fracture presented at the Middlesex Hospital; 468 affected the trunk, 911 the superior, and 522 the inferior extremities. We have now indicated as clearly as we can the influence of season, sex, and age, in the production of fracture.

Direct fractures may be produced by falling on a sharp body, by a blow, or by a musket shot; if the bone be soft and spongy, the foreign body may more or less completely traverse the bone, and the fracture may not extend beyond the point; but if the bone be hard and compact, it may be splintered, and the fracture may extend to some dis-

tance; thus, if a ball struck the femur point blank just between the condyles, it might merely leave a hole; if the same ball struck the middle of the bone, it might be shivered into fragments. If the wounding body be blunt or obtuse, and its velocity be less, the shock is not confined to the point struck, but is diffused over the whole bone or limb: for instance, if you place the hand at the extremity of a beam, and strike the other end with a very pointed hammer, the instrument penetrates the beam, but a very slight shock is felt by the hand; but if instead of the pointed hammer you use a broad one, the shock is often painful. In the one case, the violence is decomposed by the rupture of the ligneous fibres; in the second, those fibres resist and transmit the shock.

Indirect fractures, or, as they are termed by the French, by *contre-coup*, are frequent in large bones: if they be struck perpendicular to their axis, the fracture is direct; if they be struck according to their axis at one extremity, the other supported by another bone and resisting the shock is transmitted through their whole length, their extremities tend to approach, their natural curvature is increased, and if this proceed beyond a certain point, the osseous fibres are ruptured by *contre-coup*: thus, the femur, the tibia, and the humerus, are fractured by falling on the knee, the foot, or the elbow.

Occasionally, bones are fractured by muscular action; this is seen in the patella, the olecranon, and the calcis. This opinion is not universally admitted; many persons believe that the bone itself must have undergone some previous change. In the Archives, t. 13, p. 450, is a case where the use of nux vomica produced contraction so violent as to fracture the femur. Desportes mentions the case of a young negro, in whom during a violent spasmodic contraction, both femurs were fractured at the neck, and the bones protruded through the integuments. Chambers mentions the case of a lad whose arm was fractured in throwing a stone. Samuel Cooper has seen the arm of a muscular man fractured in missing a blow.

Symptoms.—Among the rational signs of fracture are the circumstances under which the injury has been received; (the grating which the patient alleges he has felt at the moment is very illusive:) pain, numbness, impossibility of moving the limb, must not be relied on alone. The pain may be the result of many circumstances other than fracture. Inability to move the limb may be a consequence of simple contusion. Numbness may result from the general shock or the partial concussion of the limb. Change of form, of length, of duration, inequalities when the bone is super-

ficially situated, crepitation and unnatural mobility, are the circumstances to which our attention must be principally directed. The deformity may not exist; it is the result of displacement, and there may be none. Crepitation, which the hand and sometimes the ear detect at the fractured point when the fragments are moved one on the other, may be easily ascertained when the bone is superficial, not always when the bone is deep, even with the assistance of the stethoscope, as suggested by Lisfranc. It is necessary to be on our guard so as to distinguish between the crepitation of bones, and that of certain sanguineous tumors—that of emphysema and certain conditions of tendinous sheaths. Unnatural mobility, shewn either by the spontaneous movements of the patient or by the examination of the surgeon. This mobility is easily seen where the part is composed of one bone, is not easily shewn in the forearm and leg when only one bone is fractured. Therefore, it results with regard to these signs, that taking either separately, it may be sufficient to indicate the existence of a fracture, although it may not have an absolute value.

Prognosis.—Our prognosis of fractures must vary with the bone implicated; the part of that bone, the kind of fracture, the age of the patient, his general condition. The smaller the bone and the deeper it is seated, the more difficult to maintain contact. A fracture implicating the middle of a long bone is usually less dangerous than one which affects their articulating extremities. When a bone is fractured at more than one point, it is very difficult to maintain the fragments reduced; and very frequently the consolidation is vicious, the limb remaining shortened and crooked. An oblique fracture is more serious than one which is transverse, because the fragments glide more easily one upon the other; an oblique fracture is not consequently so easily maintained when reduced, and the chance of shortening is therefore greater.

Fractures by *contre-coup* are less serious than those resulting from direct violence, the latter being always complicated by contusion. Fractures of the inferior extremity are, *ceteris paribus*, more serious than those of the arm; they usually require the patient to preserve the recumbent position. The most simple species of fracture is unquestionably that which occurs by indirect violence in a healthy individual; is transverse in its direction, occupies the middle third of a long bone, and at once admits of the employment of appropriate treatment. The most serious, putting out of the question complications, will be that in which the circumstances are the opposite to those above described.

LECTURES
ON THE
ALTERATIONS OF THE BLOOD.

BY M. ANDRAL.

Microscopic Researches on the Blood.

ON this subject a good deal of doubt still exists, as the facts discovered are frequently in opposition with each other. In 1673, Lewenhoeck described the blood as exhibiting a number of minute bodies, gifted with motion: he also described the shape and coverings of the globules. Boerhaave's system of *error loci* was based upon the relative proportions of the capillary vessels and globules. Huxham assigned great importance to these globules, and described, from his imagination, the changes that they are subject to. It has since been demonstrated by the microscope that the globules may be altered, as to their form, colour, volume, number, their affinities to each other, and their movements.

Form, which is lenticular in the mammifera, may undergo certain physiological and pathological changes. Their form becomes altered immediately the blood has escaped, and has ceased to circulate; and the same effect is produced by the contact of certain substances, such as the hydro-sulphuric acid. In birds, reptiles, and fishes, their form is elliptical; and some authors assert that sometimes globules of this form are to be met with in man; but, as in these cases the globules had been first dried and afterwards dissolved or diluted, I do not credit the assertion. Their form is changed when they circulate through tortuous vessels, as also when they pass through the very minute capillaries. So many alterations in their forms being thus produced physiologically, must render those which depend upon pathological causes very difficult to be ascertained. In cholera they appeared torn, their surfaces faded, and did not present the circular form. Their appearances in typhus fever are still a matter of doubt. Doctor Donn  says their form is altered in dropsy.

Colour.—Their colour in the healthy blood varies with the light by which they are seen, as it is a reflected or refracted one. Donn  describes globules of a white colour, and of a larger size than the red ones, as existing in the healthy blood, varying in number, but which were found most numerous in cases of dropsy. The red globules in the healthy condition do not always present the same shades of colour. Haller describes them as of paler colour in ill-fed animals; and Donn  says they are similarly changed in chlorosis, becoming pale and transparent.

Volume.—Their natural size is still uncertain (120th of a millim tre), the same globule being at one time larger, at another time smaller.

Number.—Is variable, but always considerable, and depends, in some measure, on the quality of the blood: they are more numerous in the arterial than the venous blood.

Age.—Denys asserts that, in the f etus, up to the third week after birth, the globules are found in the greatest number; that they diminish from this period to the fifth month, when they begin to augment to the fortieth year; and from this age to the seventieth year they again diminish.

Sex.—They are most numerous in man, whose blood contains 132 parts of globules out of 1000 parts, that of the woman containing only 92. In those of a sanguineous temperament, they are found more numerous, being in man in the proportion of 136 to 1000 of the blood, and in woman 126. In those of a lymphatic temperament, their number is diminished. Nourishment influences greatly the number of globules (Donn ); difference in diet diminishing their number from 132 to 87—They are more numerous in the carnivora than in the herbivora.

Average Proportions of the Globules in 1000 parts of Healthy Blood.

Average.		
Dumas and	129	{ 148 maxim. quantity.
Prevost		{ 115 minimum do.
Lecanu	132	{ 148 maximum do.
		{ 115 minimum do.
Denys	123	{ 173 maximum do.
		{ 164 minimum do.

In chlorosis Lecanu rates their quantity at 55 in 1000 parts. I have no reason for supposing that in inflammation their number is increased. In the commencement of scarlatina Lecanu has found in one case the number 144; in another 146. The same author has found, in organic diseases of the heart, the number diminish as follows:—101, 79, 51, 45, 43, 41, 40, shewing the proportion existing between the globules and the mass of the blood in eight cases of this affection. In diabetes their proportion was 132; and in typhus fever 115. In the healthy state, the globules are separated from each other; but in other cases they shew a tendency to coalesce together, so as not to be distinguishable: they move rapidly and regularly. In the normal state, there are vessels which do not carry the red globules, and an obstruction is produced if they by accident become engaged in them.

Alterations in the Composition of the Blood.

At present we do not know how the blood is formed. When I was studying

chemistry, the explanation that was given of its composition seemed quite clear and satisfactory to all the eminent men of that day; but now every thing belonging to it seems in a state of confusion; but we hope soon to see the uncertainty cleared up.

Alterations of the normal principles of the

Blood: First class.—First order. Organic matters—fibrine, albumen, colouring matter, fatty matter.

Second order.—Inorganic matters—gas, water of the blood, salts, iron.

In a second class we shall treat of those matters which are sometimes found in the blood, but do not enter into its healthy constitution; and in this class we shall find the matters of secretion, about which there is great discussion; we shall afterwards speak of the morbid productions, entozoa, tuberculous matter, &c. which are not found in the healthy fluid, and those substances which are not discovered by the aid of chemistry.

Berzelius states that the difference between the organic principles of the blood, viz., fibrine, albumen, and the colouring matter, is very difficult to detect; and he is of opinion that they may be varieties of one and the same principle or substance.

Alterations of the fibrine.—Its natural quantity is unknown, authors differing much on this subject. Dary says it increases in inflammation, and is found to be diminished in scurvy.

Its quantity is said to be altered in typhus. Magendie, by the abstraction of the fibrine from the blood, has induced consequences similar to those of typhus. In plethoria it has also been said to be augmented.

Alteration in its quality.—When it loses the faculty of spontaneous coagulation, the disease, which we have described under the name of dissolution of the blood, has been produced. The fibrine appears to constitute the organisable matter of the blood, and to form the false membranes when it separates from that fluid.

Alterations of the Albumen.—It has been asserted, but not proved, that like the fibrine, it is augmented in inflammation, and diminished in scurvy and typhus.

What is the state of the albumen of the blood in dropsy? Is it altered or augmented?

In certain forms of this disease, in which the urine contains albumen, its presence in it has been attributed to its being in excess in the blood. Another theory supposes the kidney to be diseased, and that it secretes the urine charged with it. In support of the first theory, it has been urged that if we inject serum into the blood of an animal, its urine will contain albumen; and also that in many cases it is found in the urine, the kidneys being sound. The result of my observations is, that in the

great majority of cases in which there is albuminous urine, the kidneys are also affected. The theory of Graves is, that the granulations which are found in the kidney are formed by the albumen which is stopped in the cortical substance of that organ; but I cannot yield to this opinion, for there are a great number of diseases of the kidney in which they are not granulated, and in which the urine is altered: my opinion is, that the kidney, like every other organ in a state of disease, is no longer capable of forming its secretions, or that it allows the blood to pass through it.

It often happens that Bright's disease begins with hæmaturia, which after a time ceases, the kidney preventing the blood from passing through, but allowing the albumen to do so; the office of the kidney permitting it to let pass a number of foreign principles, it may be supposed that when diseased, it will allow of the passage of the albumen. I think that this albuminous urine may be found whenever the kidney is greatly diseased, for I have seen it when this organ was in a state of atrophy or affected with hyperemia, tubercles, calculi, cancer, &c. The blood being impoverished by the diminution of its albumen, may be the cause of certain dropsies.

The albumen may become altered in its qualities, but such cases are hardly known. Berzelius mentions instances in which it has been changed into a fatty matter.

The red colouring matter of the blood may be augmented or diminished with the richness or poverty of the blood. Blue and yellowish colouring matters have been described as existing in the blood: certain principles of the bile are found in the blood in particular affections of the liver. Chevreuil insists upon the presence in the blood of a colouring matter, distinct from a red one; and he describes it as being of a yellow colour, and small in quantity, but capable of being increased. After severe accidents and great operations, the skin of the patient presents a yellow colour, not connected with the presence of bile; and the skin of persons bit by certain venomous serpents presents the same appearance. From their statements it would appear that there exists in the blood a colouring matter which becomes developed in certain pathological cases, and stains the skin yellow independent of the bile.

The yellow colour of the skin may be produced in three ways.

1. The bile, circulating with the blood, may cause it.

2. The development in the blood of an abnormal colouring principle, which has either been formed in it, or is merely an alteration of a yellow principle existing in the normal blood.

3. Extravasation of blood under the skin.

Alterations of the inorganic principles which enter into the natural composition of the blood.—These are water, alkali of the blood, iron, and salts. The blood contains a gas, which is the carbonic acid, and whose existence in the healthy blood is admitted by the greater number of chemists.

Alterations of the water of the blood.—What is the natural proportion of it? In a great number of diseases its quantity is much increased. The serum of the blood contains a prodigious quantity of water: according to Denys, 100 parts of blood contain 78 of water on the average. Bostock rates the proportion of water at 88; Berzelius at 90. Haller says, it varies from 73 to 93. In the batrachians, Berton found the proportion 90, and in the mammifera and birds 82 or 83.

When the water of the blood is increased in quantity, the clot formed is small, and the serum is abundant, as seen in anemia, in a high degree, and chlorosis. This condition may be named hydrohemia. Can we augment the quantity of water in the blood by modifying its composition, and by the injection of water into the stomach or veins? The blood disembarasses itself very speedily of the water which is placed in contact with it. When it does not contain its natural proportion of water, it may take some up to supply the deficiency; but when it possesses its natural quantity, it will not take into its circulation the water injected into the stomach. The experiments of injecting it into the veins have produced nervous affections, coma, convulsions, difficulty of respiration, suffocation, great discharges of water, watery effusions, the brain being found infiltrated, and the lungs oedematous, showing that the water which has been injected separates from the blood, and is thrown out of the torrent of the circulation, producing infiltrations and dropsies. These dropsies may disappear spontaneously by means of purging, copious sweatings, or abundant secretion of urine. After these sudden disparitions of dropsy, not preceded by sweating or secretion of urine, the brain becomes oppressed, coma and death taking place, or the patients may die with a panting respiration, followed by asphyxia, and in this last case the lungs are found oedematous. In these cases, the blood has taken into the circulation the fluid of the dropsy, and has thrown it on the brain or lungs. A case is related by Lecanu, of a man who, during forty days, made use of a large quantity of drink. The blood examined at the end of this period contained more water, the globules having much diminished; their proportion, at the beginning, being 154, and at the end of this time being but 111. This patient

was not restricted as to food, and neither the albumen nor the salts were altered. Great losses of blood very rapidly produce an increase in the quantity of water. A cat having been bled twice within the space of five minutes, the blood of the second operation contained more water than that of the first, and the same results have been obtained by the same means employed on man. Abstinence will cause the same increase, as will also chlorosis. In this latter affection, Lecanu found in 1000 parts of blood, 862 of water. This augmentation in the water may be acute or chronic. When a great proportion of water exists in the composition of the blood, it causes various functional disorders.

When the blood is in a state of liquefaction, serous effusions take place; when it is in a state of dissolution, and has lost the power of coagulating, hæmorrhages are produced; by abundant bleeding, we diminish the principles of the blood, thereby rendering it more liquid or fluid. We may bleed an adult very freely, without causing dropsy to take place, but it may be easily induced by large bleedings in children, as we see sometimes after loss of blood from leeches. Unwholesome food, a long time used, may bring on dropsy, such as a vegetable diet, or substances difficult to digest; and in this instance there are foreign particles introduced into the blood, which may produce its dissolution, and bring on scurvy. Can dropsy be produced by living in a humid atmosphere? Flocks of sheep, which have been exposed night and day to great humidity, are afflicted with dropsies and hydatids. I have seen persons who, on coming out of a bath, had a slight oedema of the legs, and a slight puffiness about the face; in these cases the transpiration through the skin had ceased, and the effusion into the subcutaneous cellular membrane had, in consequence, increased. In those countries where cold succeeds rapidly to heat—in regions placed beneath the equator, where a difference of twenty degrees of temperature is often felt between the heat of the day and the cold of the night—sudden dropsies are often produced between the evening and the following morning. In persons sleeping in those countries, on the damp earth, when the night is cold, the cutaneous perspiration ceases, this function is checked, the pulmonary perspiration diminishes, and the blood, in consequence of the suppression of these secretions containing more water, the serous and mucous membrane become vicarious to the suppressed functions. In this way we can also account for the rapid diminution of dropsies, which is sometimes effected by

an increased secretion from the skin and kidneys.

The quantity of water in the blood may diminish, and in these cases thirst is often severely felt.

Alterations of the inorganic principles which naturally exist in the blood.

Alkali is either free or combined with the albumen or carbonic acid. It is owing to the presence of soda that the blood is always alkaline. I have never found it acid, even in the cholera. Carbonic acid injected into the blood will give it an acid character.

Does the iron of the blood diminish in certain diseases? It has been supposed to do so in chlorosis, and the paleness which exists in this disease seems to sanction this suspicion. We are led also to this belief by induction, for there seems to be a relation between the colouring matter and the iron; and if in chlorosis we find the colouring matter diminished, it is a reason for supposing a corresponding diminution of the iron. Preparations containing iron improve the condition of the blood in chlorosis; but if the blood contain its normal proportion of iron, it will not receive any more from the exhibition of medicines containing this metal. Lecanu examined the blood of chlorotic persons; his examination tells us nothing. Dr. Fedish says it contains less iron; we do not place confidence in his analysis. We are therefore uninformed whether the blood in chlorosis contains less iron.

Salts of the Blood.—Stevens and Denys insist upon the importance of these substances. The salts and the chloruret of sodium hold in dissolution the albumen and the other principles of the blood, and if the chloride diminish, it will influence the condition of these principles. The addition of the chloride of soda liquefies the blood; the diminution of these salts ought to produce its coagulation, their increase dissolves it. These experiments have been made out of the body.

Alterations of the composition of the blood by the presence of matters which are not ordinarily found in it.

1. *Matter of the secretions.*—They do not exist in the normal state, but are found in the abnormal one. If an important secretion be suppressed, owing either to a disease of the secreting organ, or to its being taken away, the matters of such secretion are found in the blood.

2. They may be present in the blood, the excretory ducts being interrupted by some obstacle.

3. A secretion may be interrupted by

nervous influence, and its matters will be found in the blood.

4. On account of a superabundant secretion, uric acid, &c., are found in several tissues, without disease of the kidney existing, this organ being insufficient for separating this principle which exists in excess in the blood.

Fatty matter has been found by Christison in the blood in cases of acute articular rheumatism, and it has been said to exist also in it in cases of diabetes, and in disease of the liver. Tiedemann describes having found the salivary matter in the blood.

Matter of the Bile.—Some cases exist in which the colouring matter of the bile has been found in the blood. In jaundice, the blood is turned green by the addition of nitric acid, and the matters of the bile have been found in most of the solids and fluids. Is jaundice the only disease in which the blood has been found impregnated with the matter of the bile? In those affections which are called biliary, Martin Solon says he has found the bile in the blood; I have tried to find it in the variety of biliary pneumonia, but I have never succeeded in detecting the matter of the bile in the blood in any disease but icterus.

Matters of the Urine.—Uric acid has never been detected in the blood. The blood has never been found acid, and if it ever exists in it, it must be combined with a base. Urea has been detected in the blood. Dumas has removed the kidneys in living animals, and has found in their blood urea, which is the fundamental principle of urine, and which cannot be formed without its presence. Tying the ureters produces the same results. We shall now see what the cliniques teach us. When the kidneys were diseased, we have seen the blood passing through the filter of these organs, and mixing with the urine; at other times the albumen alone was allowed to pass through. What becomes of the urea in these cases? Sometimes the urine is found deficient in it, although albuminous; at other times it has been found in it. In some cases of albuminous urine the blood presented nothing particular; but in other cases I have detected alterations in its composition, as it contained a quantity of urea. Cases are related in which the solids contain urea; others, in which the urine has been met with in the principal secretions; I doubt them. Fisher mentions cases where it was secreted by a great number of organs. Is the presence of urea in the blood followed by any bad results? If the secretion has been slow, the accidents are not very evident; but if it has been caused rapidly, by taking away the kidney producing a suppression of urine, the results are

very evident. In cases where an acute inflammation has suppressed the secretion of urine, typhoid symptoms have followed, with all the symptoms of nervous re-action. Milk, or its principle, caseum, has been said to have been found in the blood; but these facts require confirmation, as chyle, albumen, or fatty matters, might have been mistaken for it. I do not know a well-authenticated instance in which its presence has been ascertained in the blood. In puerperal fevers, the caseum of the milk may perhaps be found in it.

The products of morbid secretions may be found in the blood.

Pus.—When this morbid production has been detected in the blood, we must inquire into its formation. It has either been formed in the blood itself, in consequence of this fluid having been converted into the pus, or it may have been secreted from the sides of the vessels in the situation in which it has been found. If thus secreted by the walls of the vessels, it may be found, distant from the spot where it was formed, as is sometimes seen in inflammation of the veins of the arm, whence it is carried with the blood into distant parts. Lastly, the pus may have passed into the blood by absorption.

In the following acute diseases, pus has been found in the blood:—in acute metritis, phlebitis (general or local), metropéritonitis, and once in acute articular rheumatism. In chronic disease it has been found in phthisis. In what part of the vascular system, excepting the lymphatics, has pus been found? It has been seen in the heart mixed with blood, and frequently in the veins, but I have never found it in the arteries, except in one case of circumscribed arteritis, produced by a partial inflammation. What are the pathological circumstances which accompany this purulent condition of the blood? They are numerous; sometimes large foyers of suppuration, or large suppurating surfaces; suppurating wounds and phlebitis; at other times there exist none of these circumstances, and we merely find an alteration of the blood, which is itself the source from whence the pus is produced. In other cases it is found disseminated and infiltrated through the blood, and closely intermixed with it. It may also be met with in drops, floating in the blood, but distinct from it, or forming small dépôts or abscesses, enclosed in a false membrane, which separates it from the clot of blood in which such a purulent deposit may be found enclosed. These drops of pus have been most frequently met with in the veins; whereas we more frequently find in the heart de-

posits of pus, imbedded in clots of blood but distinct from them.

Donné says, that pus, added to blood in a coagulated state, produces its liqúefaction. According to Maude, blood added to pus coagulates it. The same author, in beating up blood, perceived a membrane forming itself around the rod which he employed. If he added pus to the blood before he beat it up, this membrane did not form; however, if the quantity of pus added were small, the membrane appeared, but in a very indistinct form, and if the quantity of pus were increased there was none formed.

If we add pus to blood deprived of its fibrine, and examine it with the microscope, we perceive the coats of the globules becoming infiltrated, the globules themselves turning opaque, their forms lengthening, and, finally, they disappear.

From the fact of the globules of the blood differing from those of pus, it might be inferred that no difficulty would be found in distinguishing them from one another: such, however, is not the case. The globules of the blood vary in aspect, colour, &c. By the action of ammonia, pus becomes congealed; and on the addition of blood, the globules are dissolved. In some cases, however, certain portions of the blood become congealed by the ammonia; and this mode of experimenting is therefore inconclusive, and the *experimentum crucis* is yet to be discovered.

How does pus find its way into the blood? It must either be absorbed or secreted by the walls of the blood-vessels or of the heart, or formed by the blood itself.

The absorption of pus is a very rare case, and I do not think that its presence can be attributed to such an action; for if such were the case we should meet with it more frequently in cases of phthisis, for example; and even if it did thus find its way into the blood, it may undergo some alteration. I am, therefore, of opinion, that, in the majority of cases in which pus is found in the blood, it is not owing to absorption.

Pus is often found in the blood after phlebitis, but this disease will not explain all the cases in which it is so found. In some instances it has been detected where no traces of phlebitis existed.

In some cases, where pus is found in a vein, it mixes with, and is carried along with, the blood; but, in the great majority, clots are formed, which imprison the pus, and prevent it from circulating with that fluid.

Jessier mentions, that pus secreted in a vein can never enter into the torrent of the circulation, as it becomes isolated in

the place where it was formed. I am not so exclusive, for I have seen cases where this plug or clot was not formed, and where the pus was carried into the circulation. Gendrin is of opinion, that in certain cases the blood becomes altered, and is changed into pus. This theory comes from Dehaën. I am inclined to this view, which explains certain morbid phenomena.

Duplay relates a case in which the greater number of the blood-vessels contained no blood, but were filled with pus; the patient presenting all the symptoms of a purulent fever, unaccompanied with any signs of phlebitis.

To explain those cases in which we find abscesses or purulent deposits in different places, either in acute or chronic forms, we must suppose that the pus first became mixed with the blood, and afterwards separated, but by what process is uncertain. I think it probable that, in these cases, the blood itself is in fault, and that it forms the pus as it may form uræa, under different circumstances.

The theories to explain those purulent deposits are therefore uncertain, and they have been ably discussed by Dehaën.

Encephaloid matter in the Blood.

Has its presence been ascertained? The blood may present an alteration which may render it a very difficult question to distinguish it from the encephaloid matter.

In the cancerous diathesis we sometimes meet semi-coagulated blood, strongly resembling this encephaloid matter, plentifully deposited in the greater part of the solids and in many of the veins, and more especially in the vessels in the neighbourhood of the cancerous ulcer or deposit. It has been in particular in subjects who presented such encephaloid deposits in their solids, that this matter has been found in the blood, and which so closely resembles it; but I will not affirm that it is the encephaloid matter itself.

I do not know whether tuberculous matter has been detected in the blood.

An Italian has found, as he supposes, entozoa existing in the blood. It has been said that the presence of hydrosulphate of ammonia, calculi, &c. has been detected in the blood.

Principles in the Blood inappreciable by the help of chemistry or of our senses, but rendered evident by those organs becoming affected to which the blood is sent; this fluid presenting no visible alteration.

The blood of an animal exhausted by fatigue undergoes some alteration; for if

injected into another animal, it will produce death, accompanied with symptoms of poisoning. If the blood of an animal affected with anthrax (*maladie charbonneuse*) be injected into another animal, this latter will be infected with the same disease. We have, therefore, reason to suspect some alteration of this blood, although it will be impossible for us to detect it by any means with which we are acquainted. In the old writers, we often meet with the words "acrimony or sourness of the blood." These words may, perhaps, comprehend more than they seem to express. May they not refer to some alteration of the blood furnishing unhealthy elements or matters of secretion, which thus deteriorated would produce diseases in the solids? If we look for the origin of those general formations or deposits of uric acid which we find in the solids, we may find it in the blood which deposits in various parts of the solids, cartilages, bones, &c. By reflecting on these circumstances, and arguing from hypothesis, I think it more probable to refer to the blood those general morbid secretions, as tubercles, than to suppose an alteration of the solids in which we may find them. Do those furuncles which we see disappearing and returning after uncertain intervals, owe their origin to some alteration of the parts of the skin on which they are situated, or are they owing to some particular alteration of the blood? I am inclined to refer them to the latter cause, as we often find other secretions in a morbid condition producing discharges from the mucous surfaces, or disorders of the nervous system; and it is evident that these general symptoms depend upon some common cause. In a great number of diseases which have their origin in a common cause, we may ask if this cause is not to be found in the blood itself.

The blood may become altered by substances coming from without, and mixing with it. The kind of food may modify the blood, as well as different conditions of the atmosphere; many poisons which are capable of being absorbed by it—*miasmata*, virus, &c.

In the cases just alluded to, is the blood really altered, or does it merely carry along with it the elements of these substances?

In some of them it is not altered, and can disembarass itself of these poisons; in other instances it becomes really altered by the contact of these poisons, and the morbid condition produced is owing to the combined influence of the poison and of the alteration or morbid condition of the blood itself.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

A Treatise on the Causes and Consequences of Habitual Constipation.
By JOHN BURNE, M.D. Fellow of the Royal College of Physicians, Physician to the Westminster Hospital, &c. London, 1840. 8vo. pp. 257.

AFTER giving an account of the disposition, relations, organization, and functions of the large intestine, Dr. Burne relates more than sixty cases of disease which he supposes to have proceeded from constipation. Among them are cases of sick headache, pyrosis, gastralgia, menorrhagia, amenorrhœa, dysmenorrhœa, leucorrhœa, colic, dysentery, diarrhœa, diseases of the rectum, erysipelas, &c. &c. The following one may serve as an example.

CASE XXXII. — *Disease of the cardiac extremity of the stomach, and subacute-chronic inflammation of the cæcum and colon. Constipation.*

October 9, 1839.—Mrs.—, aged 21, married two years, has no child, menstruates regularly, though scantily and with pain. She complains of sickness and pain in the stomach after food, of whatever kind and whenever taken, which continue till the whole has been thrown up. Sometimes she vomits immediately the food has been swallowed, at other times not till the expiration of an hour. First the food is vomited, then a hot, sour, ropy fluid which burns the throat, excoriates the mouth, and sets her teeth on edge. She does not become easy till the whole of this fluid has come up. Her appetite is good, and she never feels satisfied; yet the moment she swallows anything the above symptoms are induced. She is weak, and much emaciated: the tongue is reddish, clean, moist: the pulse small: the hands and feet cold.

She has always suffered from constipated bowels: strong medicines being required to produce an action; and has now been a week without a dejection, notwithstanding she has taken aperients every other night. The stomach symptoms have existed three years.

On exploring the abdomen I find a tumor in the left hypochondrium, hard

and rounded, more perceptible in the erect than in the horizontal posture. It is situated deep, exactly in the region of the cardiac extremity of the stomach, being more forward and higher, and nearer the epigastric region, than the spleen. Connected with the gastric symptoms, I conclude it to arise from disease of the cardiac extremity of the stomach.

I find, also, tenderness and pain in the regions of the cæcum and sigmoid flexure, and along the whole tract of the colon, so distinct and well marked as to indicate a pathological condition of the whole of the large intestine: probably a subacute-chronic inflammation and thickening of the mucous and submucous tissues with contraction of the gut; states which are common consequences of the irritation of knotty, hard, scybulous fæces unduly retained in the large intestine. The aspect of the case is that of extensive disease both in the stomach and colon, advanced to a point probably beyond the power of medicine.

To take Hydrarg. Chloridii gr. $\frac{1}{2}$, Opii gr. $\frac{1}{4}$ after breakfast and dinner; Extract. Colocynth. Comp. gr. v., Opii gr. $\frac{1}{2}$ every night; and the Mist. Magnes. cum Magnes. Sulphat. et Decoct. Aloës Comp. every morning. To apply an Emplast. Hydrarg. cum Ammoniaco to the region of the stomach.

Oct. 16.—The medicines operate well upon the bowels. The mixture has been taken in the evening, it having been rejected by the stomach when taken in the morning. She has experienced no relief. At the end of October, when this report was concluded, no amendment had taken place. She suffered less in the horizontal than in the upright position.

Remarks.—This case illustrates the connection between organic disease of the stomach and habitual constipation, which latter preceded the stomach affection for years. The cardiac disease has occurred at an unusually early period of life. The pain and tenderness in the seat and course of the large intestine accord exactly with the symptoms and cases detailed by Mr. Annesley in his work on the Diseases of India; in which he has so amply shown that these symptoms indicate a morbid condition of the large intestine. The profession is much indebted to him for having pointed out and urged the necessity of exploring the

abdomen, and the certainty with which disease of the large intestine may be traced, even where there is no tumor to fix the attention" (p. 75).

In such a case as this would it not be worth while to try a brisk counter-irritation to the supposed seat of disease, (with tartar emetic ointment, for instance,) and the frequent use of warm baths?

After all, although in many or most of Dr. Burne's cases, constipation may have added to the disease, if it did not originally cause it, still it must be allowed that the use of purgatives is far from neglected in this country. We are inclined, indeed, to side with Dr. Holland, when he says, "If asked whether the use of purgative medicines, beneficial beyond all others under certain conditions, is not carried too far in modern English practice, I must affirm my belief that it is so; and each successive year of experience strengthens this conviction." (Med. Notes and Reflections, p. 98.)

We are, therefore, gratified that our author has dedicated a chapter to the causes of habitual constipation, and that in the next one there is a section on its treatment independently of medicine. Of all the causes of habitual constipation, he says, there is none so general as inattention to the calls of nature. "A misplaced sense of delicacy, an absolute disregard of the calls of nature, some engagement from which persons do not at the moment liberate themselves, the inconsiderate or ill-planned situation of the closet, or of the out-of-door cabinet d'aisance, all conspire to counteract the operations of nature and to originate constipation.

How often does it happen that ladies, feeling it not quite convenient to retire to the closet at the moment they experience an admonition, defer it till a more favourable opportunity; but this opportunity having arrived their efforts are powerless; the bowel will not then act; and disappointment and discomfort ensue. Delicacy on their part is carried to a most pernicious extent in England, while on the other side of the channel the reverse obtains; happily, perhaps, as regards health and ease. An English gentleman, while in France, having one day occasion to go to the cabinet d'aisance, found it occupied by a lady; the door not being bolted. Em-

barrassed, he retreated to his apartment; where in a few minutes, another lady of the family came to him, saying, "Monsieur! la place est libre!" The Englishman blushed for an instant, but, quickly recovering, said to himself, en allant, "Eh bien! If Madame feels no delicacy in this matter, why should I?" (p. 163.)

Dr. Burne has omitted to observe that the extreme reluctance to be suspected of visiting the Temple of Cloacina is *du plus mauvais ton*, and belongs to the pinched and frigid manners of the middle classes. Denman says, when speaking of retroversion of the uterus, a displacement caused by neglecting to make water, that "women who live in an humble situation of life, or in an unrefined state of society, are scarcely ever liable to this complaint, because they are free from the constraint of company; and those in the highest ranks of the most refined society, not being abashed to withdraw from company, are nearly in the same situation. But those who, in a middle state of life, with decent, yet not over refined manners, have not cast off the bashfulness of the former, nor acquired the freedom of the latter, are most subject to the retroversion of the uterus."—(Introduction to the Practice of Midwifery, 6th edit. p. 78.)

Something, no doubt, is sacrificed to decorum: but the immolation of health and comfort on its shrine is absurd and extravagant; and when it is generally understood that a Countess in her own right does not blush to leave the room, we may hope for equal boldness from an attorney's wife.

In well-constructed modern houses we believe it is a rule to have a water closet on at least two, if not three floors; nevertheless, there are too many dwellings to which the following observations are applicable.

"The want of proper conveniences is most severely felt by society at large, though now less unquestionably than formerly.

The situation of closets is often ill-judged. If of ready access, too exposed: if remote, inconvenient. In number too they are apt to be sadly deficient: one perhaps for a whole family, and this most unfortunately placed. Then, again, the out-of-door cabinet d'aisance is sometimes situated at a dis-

tance from the house, and the access to it often runs in front of the sitting room windows; the locality itself being often cold, damp, and repulsive.

One cannot help wondering to see so much pains bestowed on the arrangement and decoration of a house, while a disregard is manifested with respect to the closets and cabinets d'aisance, upon which conveniences, nevertheless, the health and comfort of a family and their visitors depend.

Is there any one who has not at times found the pleasures of a visit neutralized by difficulty in attending to the bowels? How often do both sexes suffer from unusual constipation when from home, especially while travelling abroad, for want of proper conveniences and opportunities; sufferings which mar all their anticipated enjoyments. Travellers on the Continent know well the miseries they have encountered in this respect. But we need not leave our own shores to experience annoyances like these; for in Britain itself there are towns in which a great part of the houses have not only insufficient conveniences, but absolutely none at all." (pp. 164, 165.)

Other causes of constipation are, the want of exercise, anxiety of mind, and sedentary habits and occupations. The poor girls who drudge for dress-makers and milliners sometimes work fourteen or fifteen hours a day:—"Many do not leave the house from Monday morning to Saturday night. So exhausted are they at the close of their daily labours, that I hear they can scarcely "drag themselves upstairs to bed;" the truth of which is too plainly told by the pale sallow faces, palpitating hearts, and swollen ankles which they exhibit." (p. 168.)

Then come pathological causes, such as deficiency of bile, diseases of the brain, stricture, organized bands stretching across the channel of the bowel, or a diverticulum. "A diverticulum is an anormal process from some portion of the intestinal canal, generally the jejunum or ileon, of from three to five inches in length, about the size of the middle finger, communicating openly with the bowel, but having its distal extremity closed, forming indeed a cul-de-sac, very similar to the appendix vermiformis, except that it is larger and has no mesentery." (p. 177.)

Or there may be a mechanical obstruction caused by swallowing foreign sub-

stances, such as magnesia, chalk, sulphur, cubeb, white mustard seed, pills, adulterated bread, fruit stones, or sesquioxide of iron (*ferri subcarb. Pharm.* Lond. 1824.)

In one case related by Mr. Brande, from four to six pounds of magnesia were found embedded in the head of the colon, though the examination occurred six months after any magnesia had been taken. The alum used to beautify London bread, though supposed by Dr. Paris to be only ten or fifteen grains in a quartern loaf, is justly considered by our author as a cause of habitual constipation. He relates a curious trick by which a baker was once brought to confess his toxicological practices:—

"The late Dr. Babington having often heard that the London bakers mixed alum in their bread—to which it was supposed to owe its whiteness—made several attempts to detect it, but without success. Being a man of humour, he determined to try another expedient. Having broken a loaf in two, he rubbed the surfaces with finely powdered alum, and directed that, when the baker next called, he should be informed. Accordingly the man was shown into the library, when the doctor, putting on a serious countenance, observed, 'I thought, Mr. Baker, you told me that you never put alum in your bread. Now,' producing the loaf, 'what is the meaning of this sparkling appearance, which any one may tell is alum by the taste?' Taken by surprise, and overwhelmed by so palpable a proof of the fact, the baker inadvertently replied, 'I don't well know how it can be, Sir, but suppose some accident has happened, for we don't in general put as much into the whole batch. And thus the doctor gained his point.' (p. 188.)

In the chapter on the treatment of habitual constipation, our author recommends early rising, the habit of frequenting the water closet regularly, exercise, and change of scene. We recollect that Locke, in his treatise on Education, wishes children to be *taught* to go to stool daily after breakfast.

Among articles of diet, our author recommends coarse brown or bran bread, figs, prunes, mustard seed, ripe fruits, and bacon. "A glass of cold water taken on rising in the morning, will in some promote an action of the bowels."

The remainder of the chapter is on the use of aperient medicines, and the

particular merits of several purgatives; of means applied to the large intestine; and of the treatment of obstruction of the bowels.

The last chapter is on the influence of constipation in causing the more prevalent diseases of India, and is abstracted from Mr. Annesley's great work.

Dr. Burne's treatise is the work of a sensible and industrious physician.

The Anatomist's Vade Mecum: a System of Human Anatomy. By W. J. ERASMUS WILSON. With upwards of 150 illustrations, by Bagg. London, 1840. Small 8vo. pp. 551.

MR. WILSON has done good service, both to the practitioner and the student of anatomy, by the publication of this compendium. He has given an excellent abstract of established anatomical knowledge, and has not neglected those late refinements, of which some are as yet struggling for existence. The following extract will not only give some notion of our author's manner, but will be new in substance to many of our readers.

The "*tensor tarsi* (Horner's* muscle) is a thin plane of muscular fibres, about three lines in breadth and six in length. It is best dissected by separating the eyelids from the eye, and turning them over the nose without disturbing the *tendo oculi*; then dissect away the small fold of mucous membrane, called *plica semilunaris*, and some loose cellular tissue under which the muscle is concealed. It arises from the orbital surface of the lachrymal bone, and passing across the lachrymal sacs, divides into two slips, which are inserted into the lachrymal ducts as far as the puncta.

Actions. * * * The *tensor tarsi*, or lachrymal muscle, draws the extremities of the lachrymal ducts inwards, so as to place the puncta in the best position for receiving the tears. It serves also to keep the lids in relation with the surface of the eye, and compresses the lachrymal sac. Dr. Horner is acquainted with two persons who have the voluntary power of drawing the lids inwards by these muscles, so as to bury the puncta in the angle of the eye." (p. 136.7.)

The wood-cuts do Mr. Bagg great

credit. Among those which particularly struck us, are fig. 4, giving a lateral view of a dorsal vertebra; fig. 24, representing the external or basilar surface of the base of the skull; and fig. 90, where the superficial muscles of the posterior aspect of the leg stand out in bold relief. If we might hint a fault, we would suggest that the frontispiece and the engraving on the title-page are not in good taste, and remind one of Holland rather than Greece.

The type is small, but exquisitely distinct.

CASE OF
SPONTANEOUS DISLOCATION
ON THE
DORSUM OF THE ILIUM.

To the Editor of the Medical Gazette.

SIR,

You will greatly oblige me by inserting the following case in your valuable periodical, since it forcibly demonstrates the error of not immediately and actively attending to what are too often considered trivial accidents.—I am, sir,

Your obedient servant,

C. M. DURRANT, M.D.

Ipswich, April 24, 1840.

A gentleman, passed middle age, residing in the country: while walking in his plantation, on turning suddenly round, his foot slipped, and he fell to the ground, his right hip forcibly coming in contact with the projecting stump of a tree. Great pain and syncope were induced, but on the following morning the pain of hip was so much alleviated by rest, that the patient rose and pursued his usually active avocations. The pain of hip, however, remained, and was much aggravated by riding on horseback, especially on mounting. Some months after the accident, he was attacked with spasmodic stricture of the urethra, attended with a considerable discharge of mucus from that canal, and which was rendered very profuse by the constant use of the catheter; this, together with the stricture, for a long period combated the most judicious treatment. The pain in the neighbourhood of the hip continuing, it was believed both by the gentleman and his friends to be neuralgic, and treated as such, but without relief. A belladonna plaster was ordered

* "W. E. Horner, M.D. Professor of Anatomy in the University of Pennsylvania. The notice of this discovery is contained in a work published in Philadelphia in 1827, entitled 'Lessons in Practical Anatomy.'"

to be applied to the hip, but by mistake a blister was substituted, which, by producing excessive local and general irritation, aggravated very considerably the existing symptoms.

Up to this time, the patient (who now went to London for advice) was not confined to the house, but took daily exercise on foot. He was totally unable to pass his water without the catheter, but by the constant use of this instrument, (which was finally retained in the bladder for ten days without removal) by opiates, and other means to allay constitutional irritability, the stricture was at length cured. During the treatment of the stricture, but before the cure was complete, the pain of hip increased, amounting, on the slightest motion, to excruciating agony. The pain the patient suffered at this stage of the disease is beyond description; this, combined with total absence of sleep, colliquative diarrhœa, and profuse night perspirations, baffling all the remedies prescribed to check them, appeared too evidently hastening the case to a fatal termination. Notwithstanding the above distressing symptoms, perfect rest, the continued use of powerful anodynes, and above all, as early as could be attempted, removal from London, to the accustomed country air, effected by short stages, and the use of a water couch, aided by a most excellent constitution, at length produced a beneficial change; the patient, after suffering one or two relapses, gradually recovered, but not till spontaneous dislocation had supervened.

The limb is now shortened to the extent of from three to four inches, with the other symptoms of perfect dislocation on the dorsum of the ilium. The patient, at first unable to lie on the affected side, can now do so with ease; he cannot yet, however, bear much pressure on the limb. The general health is good; stomach slightly irritable, but easily regulated by mild aperients. There is no remaining symptom of stricture, and the patient is enabled, with the assistance of an arm and one crutch, to take prolonged daily exercise. There is also an ultimate probability of deriving assistance from a raised or patten shoe.

REMARKS.—The above case appears one of peculiar interest in many points of view.

The inflammation of a chronic character which in the first instance attacked the tissues of the hip-joint, much aggra-

vated by constant exercise, produced such irritability in a naturally excitable constitution, as to cause subsequently spasmodic stricture of the urethra. Until this period no professional advice was sought.

Prior to the cure of the stricture, we observe the inflammation assume an active character; the ligaments and synovial membrane quickly run through the degenerative process, spontaneous dislocation takes place on the dorsum of the ilium, where nature, assisted by a good constitution, is doubtless adapting the misplaced limb by the formation of an artificial joint.

The above is one of the many cases which are frequently allowed to pass as too trivial for surgical interference: the error is commonly discovered when too late, the period of prevention or cure being irretrievably passed. This is particularly illustrated in the case under consideration, for had active measures been adopted at the time of the accident, by local bloodletting, fomentations, purgatives, &c., combined with absolute rest, the above distressing sequel would, in all probability, have been prevented.

ON THE
INDICATIONS TO BE FULFILLED
IN
DIABETES MELLITUS.

To the Editor of the Medical Gazette.

SIR,

SHOULD the accompanying paper be deemed worthy of publication, you will oblige me by giving it a place in your journal.—I am, sir,

Your obedient servant,

CHAS. MAITLAND, M.D.

St. George's Hospital,
May 4, 1840.

The efforts of physicians in treating cases of diabetes mellitus appear to be still as much directed to the kidneys as they were five years ago; yet, since that time, sufficient facts have been accumulated to render it more than probable that these organs are nearly unconcerned in producing the mischief usually attributed to them.

In deference to the opinion of the profession, I have said, "more than probable;" but if the following argu-

ments are legitimate, and cannot be opposed by others of equal force, it is high time to change the plan of attack, and not to waste our energies upon those organs which appear to be engaged in the relief of the oppressed system.

By a reference to McGregor's "Essay on Diabetes," and my "Experimental Essay on the Physiology of the Blood," the following facts may be collected, which, I believe, have not been disputed by subsequent inquirers.

The stomach, in diabetes, has the property of forming sugar, from animal as well as from vegetable food.

Sugar is contained in the blood, urine, saliva, and stools of diabetic patients.

Such patients pass more urea than healthy ones.

No urea has been found in their blood, though albumen has been found in their urine.—(Bouillaud, Clinique Med. III. 289.)

Let us now look at the morbid anatomy of the question. Andral says, (Treatise on Pathology), "Of all the lesions presented by the kidneys of those diabetic patients whom I have examined, hypertrophy is the most common." Again (Path. Anat.), he alludes to "the state of paleness and anemia which has long been regarded as their principal alteration," and adds, "of all the post-mortem inspections published during the last ten years, there is none, that I know of, that has presented the anemic appearance of the kidneys, so much spoken of." The observations of others, including those which were made with the microscope, seem equally to prove that no perceptible morbid alteration is yet found regularly accompanying fatal diabetes.

A strong argument may be deduced from a comparison between this disease and renal dropsy. In the latter, the organic disease of the kidney has been fully established, and the results (as far as chemical pathology is concerned) are as follows:—

In the healthy state, the blood contains (besides numerous other constituents) water, albumen, and urea: the kidney is charged with the office of removing *part* of the water, *all* the urea, and *none* of the albumen. A most arduous commission, perhaps requiring a greater supply of vital energy for its performance than is bestowed on any

other secreting organ: for the kidney furnishes the largest of the secretions; it preserves the whole of the fluid passed through its ducts from any admixture of albumen, and it drains off the urea from the blood with such accuracy that it has not yet been detected in that fluid in health. We must not forget, in addition, that urea is found (by chemical tests) in *no part* of the healthy system *but* in the urine; and that albumen exists in *every part* of it, solid or fluid, *excepting* the urine; which fluid is strictly excrementitious, and therefore not required to contain an element so universally applicable to nutrition as albumen appears to be.—(Experimental Essay, p. 84.)

But when the granular degeneration is established, the kidney, like a sentinel negligent or physically incompetent, suffers to pass some of the albumen that should have been rejected, and leaves in the blood some of that urea that should have been carefully extracted; but no new matter is elaborated from the blood, and no function performed analogous to what has been attributed to the diabetic kidney. Then we find, during the prevalence of renal dropsy,

In the Blood.	In the Urine.
Defect of albumen.	Excess of albumen.
Excess of urea.	Defect of urea.
" water.	" water.

But in diabetes mellitus,

In the Blood.	In the Urine.
Excess of sugar.	Excess of sugar.
Excess of water.	Excess of water.
Urea unknown.	Excess of urea.

I think these facts point distinctly to the conclusion, that in the case of renal dropsy, the kidney *deranges* the constitution of the blood, by imperfect performance of its function; while in diabetes, the secretion is *deranged* by the organ being compelled to remove from the blood, elements, exceeding in quantity and number those which fall under its change in health. No wonder that Andral finds hypertrophy in the diabetic kidney, any more than that the same alteration is found in the obstructed heart.

Perhaps no disease has more exercised the ingenuity of reasoning physicians, or furnished a more fruitful theme for false reasoning, incorrect and unfounded data, than the present. The cases in

which diabetes occurs are by no means very rare, and each one stimulates the medical attendant to renewed efforts to make some progress in understanding it. Yet, little has hitherto been done; perhaps because we seek too remotely for what we miss; and it is notoriously easier "to ascend the bright heaven of invention," than to tread patiently the humble path of observation and close induction.

The following suggestions are offered with diffidence, and in the hope of seeing the subject more ably treated by others.

May not diabetes mellitus be considered as a complication of two distinct lesions in the system—one, a saccharine diathesis, analogous to the excess of nitrogen in the uric acid diathesis, produced by a tendency of the aliments to degenerate into sugar, after the manner of starch and hordein; and the other, an irritation in the stomach and kidneys, leading to excess of fluid swallowed and excreted?

Three cases of diabetes insipidus examined by Macgregor and myself, gave 310, 336, and 400 gr. of urea *per diem*, respectively, the usual amount of healthy urea being 360 gr. daily. These cases shewed a total absence of sugar; therefore they establish the fact, that there may be abundant flow of urine (in one case, 26lbs daily,) simply diluted.

May not the sugar be a source of irritation; first, to the stomach, causing thirst, and secondly, to the kidneys, causing diuresis? In support of the last opinion, may be mentioned the facts, that sugar is an irritant applied externally; that it causes thirst when taken in excess; and that in the only case of diabetic blood which I have analyzed, the water was in excess, in the proportion of 815 to 783.

The degeneration of aliments into sugar cannot be ascribed to a deficiency of the nervous influence presiding over the stomach, but to its morbid direction; for sugar is formed by the diabetic stomach from animal materials, which can be made to yield it under no other circumstances.

Lastly, are the means usually employed to correct the saccharine tendency, such as can be reasonably expected to benefit the supposed irritation of the stomach and kidneys?

THE HORLEY GREEN CHALYBEATE.

To the Editor of the Medical Gazette.

SIR,

I BEG to announce to the profession, through the medium of your periodical, the restoration of the Horley Green Mineral Water, once so celebrated for its medicinal efficacy, and the results of its new analysis, by Mr. West, of Leeds.

In the year 1790, Dr. Garnett published, what was considered at that period, a very valuable treatise on the subject, embracing an elaborate analysis, to which a series of successfully treated cases by this water was subjoined; since which time, however, from one cause or other, to which I need not refer, the spring has been gradually permitted to fall into comparative desuetude and neglect, until at length, more recently, it had become entirely lost—numbers of people, notwithstanding, visiting the place annually on the three first Sundays in the month of May, in a vain search for this fountain of Hygeia. On a visit of Dr. Granville to this neighbourhood, we were unable to discover more than the site of the well, which was enveloped by the ruins of the Spa-house that originally enclosed it. On removing these remains, a slender stream was found flowing into its receptacle, which, when tested with the tincture of galls, and an aqueous solution of ferrocyanide of potassium, afforded no indication of the presence of iron, and must, therefore, have consisted of top waters infiltrating the shaly soil around, without any admixture of the chalybeate. Sundry explorations in the vicinity, which need not be detailed, ultimately led to the discovery of the water in question, to which I now invite the attention of your readers, as examined by Mr. West.

The Horley Green Water contains per imperial Gallon,

Carbonic Acid Gas,	5.5 cubic inches.
Nitrogen,	7.25 do.
grs.	
40.77 Sulphate of iron (dry, or 74.5 in cryst.)	
15.26 Sulphate of Lime (or, 19.3 in cryst.)	
5. Sulphate of Magnesia (or, 10.25 in cryst.)	
.32 Chloride of Sodium (or, .59 in cryst.)	
.93 Silica.	
1.22 Alumina.	

63.5 Total solid matter.

These results differ widely from Dr. Garnett's, but my present object is not to account for the change which all the mineral springs in the course of years undergo, and which is remarkably instanced in the analysis of Professor Phillips, of the Scarborough waters, as compared with that of my own and all previous hydro-analysts, but simply to lay before the profession and public generally the chemical nature of the Horley Green Spring, leaving its therapeutical agency to be inferred, or drawn from the forthcoming work of Dr. Granville, on the Spas of England.

The decomposition, from the action of the atmosphere, which the artificial preparations of iron undergo, becoming inert sesquioxides, as in Griffith's mixture, and the common carbonate, &c., it will be an important desideratum in medical practice to possess a spring from which, by the addition of four or five grains of carbonate of soda to a tumbler glass full, we can at once obtain the like quantity of the carbonate of the metal in its pure and active state, as well as the proto-sulphate at the source. That by exposure the latter soon becomes the persulphate, I am aware, and more rapidly so, when in solution than in crystal.

The Spa is situated a mile and a quarter distant north-east of Halifax, on the west ridge of the romantic valley of Shilden-dale, and an erection is in progress by the proprietor, commensurate with the importance of the acquisition.

I have the honour to be, sir,

Your obedient servant,

W. ALEXANDER, M.D.

Physician to the Halifax Infirmary,
and General Dispensary.

Halifax, May 5th, 1840.

MEDICAL GAZETTE.

Friday, May 15, 1840.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
publicum sit, dicendi periculum non recuso."

CICERO.

PRELIMINARY EXAMINATION.

THE great and hitherto insuperable evil in the plans of medical education and examination is, that those students whose

consciences do not vividly picture to themselves the horrors of incompetent practice, can obtain, in six weeks, a quantity and kind of knowledge, which will enable them to pass, and which they conceive will carry them with credit through their professional career, while in reality it will remain with them no longer than it has taken them to attain it. We believe that the system of imparting this temporary knowledge to those among medical students who are inclined or compelled to resort to it, is now practised in a style very nearly approaching to perfection; and were its object more honourable, or its effects less mischievous, the highest credit would be merited by those professors of the art who have of late years so improved it, so that with no more diligence than the fear of rejection will supply, the student of the least intellectual capacity, and with the least previous professional acquirements, may deem a creditable and speedy passage through his examinations a matter of certainty. When, however, it is considered what a real scourge an incompetent practitioner is to all who may fall into his hands, and that in too many cases other qualities which he may possess may serve to cover his professional defects, and even make him peculiarly acceptable to the near-sighted public, few questions relating to medical education can be more important than to determine how these illicit modes of acquiring useless knowledge might be prevented; so that by cutting off all hope of a diploma from the undeserving, the idle student might be made industrious, and the industrious might receive the reward which he so fully merits, but now so rarely obtains.

The system of *cramming*, which among the junior members of our profession has acquired the figurative but very expressive name of *grinding*, (probably from its giving more edge than

substance to the knowledge,) is adopted in various degrees by the candidates for every kind of diploma. For all, we believe, the system pursued is the same; differing from each only in the expense, which is usually directly proportionate to the price and presumed respectability of the diploma. And this fact clearly shows, that no system of examination at present adopted is capable of entirely preventing the evil practice; for few modes of trial have ever been suggested of which examples are not to be found in some of the diplomatizing bodies in this country; and if we go on to France, where the examinations have certainly had every pains bestowed upon them, the same illicit mode of study is as nearly universal, as in this country it is among the candidates for the license of the Society of Apothecaries.

But although there may be at present no mode of examination capable of perfectly counteracting the practice of obtaining only that superficial and temporary knowledge which may just enable its possessor to pass, still it is far from true that the mode of examination has no influence on the frequency with which the practice is adopted.

Taking only the candidates for the College of Surgeons and the Apothecaries' Company, (of whom our knowledge permits us to speak with some certainty,) the number of those who are *ground* for the examination at the latter is nearly four times as great as of those who undergo the same process of preparation for the former; and we believe we do not at all over-rate the proportion, when we say, that four-fifths of the students in London are thus rendered capable of passing their examination at the Hall, without the least warrant that they possess any knowledge which they will not lose in the first six months after their fitness for practice has been certified by their examiners. Of course, we are far from believing that so large a proportion

are unfit for their professional duties; on the contrary, we know that many students resort to this unfair mode of preparation most unwillingly, and with deep regret. They are compelled to it, by the belief, (and we fear it is a well-founded one,) that the examination, to which they will be subjected, is not such a one as will test their real and profitable knowledge of medical practice, but one composed of the most heterogeneous questions, many of which have only a very distant relation to medical practice, and all of which require certain fixed and conventional answers, which are not to be learnt by a diligent attention to the several subjects taught in the schools, and to which the only key is the book of "Hall Questions and Answers," kept by each private tutor. The common practice, therefore, now is, for the more industrious class of students to learn their profession without any reference to their examination at this institution, and then, neglecting for a time their professional studies, to learn, by the royal road of grinding, the quirks and technicalities which can alone secure them their license. The less industrious, on the other hand, do not learn their profession at all; but they also, by a somewhat more extended course of peculiar and private instruction, render their success equally secure; and it is matter of common belief, and, to our own knowledge, it has often distinctly appeared, that more credit has been bestowed by the examiners on this latter than on the former class. In fact, although it forms no part of the plan or intention of the private tutors to impart any knowledge which may be useful in practice, yet it is notorious that a considerable proportion of the pupils of some of the more skilful of this class of instructors receive what are called the honours of the Court; that is, are complimented by the examiners on the large amount of their knowledge, and their peculiar fitness for medical practice.

But really these, and other similar errors in the system of examinations at the Apothecaries' Hall, have been so often pointed out, and the Board, in their attempts to correct them, by rendering the examinations more difficult, have so invariably adopted the course which has rendered private tuition at once more necessary and more successful, that we almost despair of seeing any improvement, and are forced to fear that, while the Hall stands, *grinding* must flourish.

For all the other boards of examiners the practice is far less frequently resorted to; not because the examinations fix a lower standard of actual medical knowledge, but because their character is more straight-forward, and the knowledge they require is that which a student may legitimately obtain by a fair degree of attention to the several studies of the schools, and to the practice of his hospital. The scope of these examinations is much more limited as to the number and diversity of their subjects; but in each subject into which they do enter, as high a standard is fixed as it seems fair to require a candidate to attain; and, with moderate industry, it may be attained by all. Illicit assistance is, therefore, sought for only by the positively idle, or the very timid; and it is much to be lamented, that while, of late years, such great exertions have been made by every board of examiners to improve their system and raise the amount of their demands, no scheme has been devised by which the incursions of the former class can constantly be prevented. The improved examinations, and the almost absolute impossibility which now exists of knowing beforehand more than a small portion of the questions that, as it is said, "are sure to be asked," by curtailing the number of stock-subjects, have undoubtedly effected much good; and still more has been done by every addition to the practical and manual part of the examination, which we hope to see constituting each

succeeding year a larger proportion of the whole. But still the system is far from perfect, and many undeserving candidates break through its fences.

It is probable that no single means will ever be sufficient entirely to put a stop to the practice which we have reprobated; but we feel sure that one which would tend much to lessen its frequency, and to counteract its mischief, is the system of previous examinations, which, from a knowledge of their good effects in our universities, we recommended a long time ago, and which the London University has since adopted into its scheme. The return of the season for competitions among the pupils of the several schools has induced us again to revert to this subject, and to urge that these examinations should be made use of in improving the general scheme of medical education. As they are at present conducted, they do not always effect even the limited good which is their object; for, not being compulsory, they are engaged in by only a small proportion of the pupils; and it often happens that the timid lose the reputation they might gain, through fear lest they should have the disgrace of being beaten, while those who are possessed of sufficient assurance save their credit by avoiding the chance of a defeat. The result is that, taking all the schools together, not more than one-fifth of the pupils engage in any of the examinations; and the honour of success is decreased, while, in a corresponding proportion, the disgrace of failure is augmented.

But the benefit of these school-examinations ought not to be limited to the excitement of an increased industry in a small proportion of the students: they should be made compulsory upon all; and the having engaged in one or more of them should be made an essential condition for admission to the ultimate examination for the diploma. For the examinations themselves, the immediate

benefit would be that the stimulus to unusual industry would be universally applied, for there are few who, when they are forced into a contest, will not do their best to gain honour in it; and that while the merit of success would be enhanced by the greater difficulty of excellence over a greater number of opponents, the demerit of failure would be diminished by the increased number of those who shared in it. And for the general scheme of education, the advantages would be scarcely less. To the industrious, a repetition of examinations would be by no means irksome—not so irksome as the constant and perpetually changing schemes of registration which are now continually being inflicted upon them; and, to the idle, for whom alone these regulations and restrictions are necessary, it would insure that the whole period that is intended for education should not be lost, as it is now, in the assurance that a few months' *grinding* are enough to pass, but that a more constant course of study should be absolutely necessary. At least, if the number of examinations to be passed were increased—if, for example, one were instituted in each year of study, each pupil would have to prepare himself three times instead of once, and there would be a three-fold instead of a single chance that he might retain some of the knowledge thus acquired. But with this plan, the examinations, being at least in part conducted by the teachers themselves, would of necessity assume a higher and a more straightforward character; and if the system of private tuition continued, as it probably would, its method must, in a corresponding degree, be changed, and, instead of providing a few weeks' store of useless and evaporating knowledge, which is all that it can now pretend to, it might be made to supply sound and profitable knowledge to the pupil.

ACCOUNT OF LAURA BRIDGMAN,
AN AMERICAN GIRL, WITH ONLY ONE
SENSE.

BY DR. JULIUS, OF HAMBURG.

DURING the last half century, several cases have been published of deaf and dumb persons who were also blind. The first instance described within this period is that of James Mitchell, who was accurately observed by Dugald Stewart; the last is Julia Brace, an American, in the Deaf and Dumb Asylum at Hartford, in Connecticut, whom I have seen. She was twenty-six years old, rather dull of sense, and ignorant, but with an acute power of smell.

There is now, in America, a girl even less endowed by Providence, of whom I will proceed to give an account, partly from the sixth and seventh reports of the Boston institution for the blind, and partly from a letter written to me by Dr. S. G. Howe, the director of the institution.

Laura Bridgman, a very pretty girl, lively, and full of spirits, was received into the asylum just mentioned in 1837; she had been blind, deaf, dumb, almost without smell, and, therefore, with a very blunted taste from early childhood. She cannot smell roses or eau de Cologne, though brought close to her, but sharp and pungent vapours seem to affect her olfactory nerves. She was born at Hanover, in New Hampshire, of respectable and intelligent parents, and suffered, while yet an infant, from very painful and dangerous fits, the nature of which does not seem to have been properly understood. Up to the age of twenty months, though pretty and attractive, she remained very feeble, so that a breath might have blown out the flame of life. At this period, however, she began to be stronger, and her intellect quickly developed itself, so that at two years old she was more clever and lively than other children of the same age: she could speak several words, and distinguish A and B. After the lapse of a month, however, she was seriously ill, and, indeed, almost dying, when the disease abated and threw itself entirely on the external organs of the senses; for, at the end of five weeks, it was discovered that sight and hearing were destroyed for ever. She passed seven weeks in pain and fever, during which time she ate absolutely nothing. For five months she was obliged to remain in a darkened chamber, and a year passed away before she could walk without support, and two years before she could bear the unmitigated light of day. Her health and strength continuing to increase, she was able, when four years old, to walk about

the house, and showed (though not by looks or words, as she was blind and dumb,) the wish to be employed. At first she was able to speak the few words she had previously learned, but, as she no longer heard her own voice, she gradually lost the power of speech entirely; the last word she was heard to pronounce distinctly was *book*.

In addition to her deafness, dumbness, and blindness, her exclusion from the external world was so entire, that she was almost destitute of smell, and could only smell the most pungent things; this destroyed one-half of the faculty of taste, and her indifference in this point became manifest. Yet this night of the senses did not extend to her mind. Every day she became more active and more cheerful, and, retaining the sense of feeling, took the greatest delight in learning a new stitch, a new way of knitting or embroidering, a new word, or finding out the method of using some new thing; and she shewed the quickest comprehension for these methods of enlarging her knowledge.

Three years afterwards, Laura, who was then eight years old, entered the institution for the blind. There she is continually in motion, runs about the house, up and down stairs, plays with her toys, and is happy with the other children. She can dress and undress herself quickly and regularly, and behaves at table, and everywhere else, indeed, with perfect propriety. She knows each person in the house by the touch, and has a great liking for them. She has learned to sew, knit, and embroider, and is as industrious and clever in these matters as the other children. Moreover, she has a lively sense of propriety, is cleanly, tries to deserve praise, likes to be neatly and prettily dressed, and makes others remark it. She has so strong a propensity for imitation, that she will sit down, and hold a book before her face, because she has perceived that those who read do so. It is difficult to say whether her sense of right and wrong depends on the one being praised and the other blamed by those around her; but it is certain that she retains nothing that belongs to any one else; and if she finds a bit of apple or cake, she does not eat it till she has been told by signs that she may. It evidently gratifies her to banter other persons, or make them wonder. The alternation of her feelings can be clearly perceived on her countenance, where hope and fear, pleasure and pain, self-approbation and repentance, are reflected in turn; and when she endeavours to get to the bottom of a thing, her face puts on the expression of reflection and strained attention.

When Laura was admitted into the institution, it seemed doubtful whether it

would be possible to teach her any regular system of signs by which she might express her thoughts, and understand those of others; but it was thought highly desirable to make the attempt, which has succeeded in part. At first, common objects were taken, such as a knife, spoon, or book, with their names fastened to them in letters in relief. She was then made carefully to touch the object, together with the name appended to it; and then another piece of paper was given her to touch, on which the name was printed in relief, which she quickly learned to connect with the object. Afterwards the name of the object in relief was put into her hand, and she had to find out the object among a number of things spread before her. Suppose the word *key* had been given her, and she could not find one on the table, she would get up, grope her way to the door, and, with the expression of marked satisfaction, she would hold the paper against the key in the door.

In these exercises, no reference had been made to the composition of words out of letters; but to try the accuracy of her knowledge, the next step was to put metal letters in her hands, which she soon learned to arrange, and thus spell the required word. When the teacher, for instance, touched the child's ear, or placed her hand first on a book, and then on the letters, she immediately began to seek for the letters singly, and arrange them in a little frame prepared for this purpose. When the word was properly set up in this way, she showed her satisfaction, and assured her teacher that she understood the word, by touching her ear, or the book, with the letters that composed it.

The next step consisted in teaching the child the order of the letters in the alphabet, after which she was taught the finger alphabet of the deaf and dumb. When she had been four months in the institution, it was wonderful and delightful to see with what zeal, accuracy, and quickness, she went on in her work, and in augmenting her small stock of words. When the teacher gives her a new object, for example, a lead pencil, he first lets her examine it, and obtain an idea of its use, and then teaches her to spell its name, by forming the letters of it with her fingers. She then takes hold of her hand, feels the fingers as the different letters are formed, turns her head somewhat on one side, like an attentive listener; her lips are open, and she scarcely breathes, until her countenance, which is at first anxious, gradually puts on a smile, as she comprehends the problem. When this is over, she lifts up her fingers, and spells the word according to the finger-alphabet; then takes the metal characters, and sets up the let-

ters singly; and lastly, as if to assure herself that she has done all right, takes the letters of the word collectively, and brings them into contact with the lead pencil.

A year later, Laura had already attained great skill in spelling according to the alphabet of the deaf and dumb, in which she spells words and sentences, which she knows so quickly, that only those who are accustomed to this mode of speaking can follow with their eyes the rapid movements of her fingers. But wonderful as is the rapidity with which she writes her words in the air, still more surprising is the ease and correctness with which she reads words written in the same way by another person. She does it by taking hold of his hand with her's, and follows each movement of his fingers, imprinting upon her mind one letter after another, as he expresses it. Thus she entertained herself with her blind play-fellows, and nothing more clearly shows the power of mind in subduing matter than her meetings with them. For if much talent and cleverness are requisite for two persons who speak by gestures to expound their thoughts and feelings by their features and by the motion of their body, how much greater is this difficulty when both persons are shrouded in darkness, and one of them cannot even hear?

When Laura goes through a passage in the house, with her hands stretched out before her, she instantly recognizes each person that she meets, and goes up to him with a sign of recognition; but if it should be a girl of her own age, particularly one whom she loves, a brilliant smile of recognition immediately appears; she embraces her arms, takes hold of her hands, and begins that rapid conversation with the fingers, whose motions conduct thoughts and feelings from the outer works of one mind to those of the other. Then follow questions and answers, an exchange of joy and sorrow, kisses and adieus, just as with young children in the enjoyment of all their senses. What a lesson for those philosophers who attribute the superiority of man merely to the possession of his external senses, and will allow him to be no more than the most perfect of animals!

Nevertheless, it must not be supposed that she knows as much as other children of the same age: at nine years old her knowledge of language was not greater than that of an ordinary child of three. As to mind and morals, however, her feelings and inclinations, her sense of propriety, of justice, of property, and so on, are as developed in her as in other children.

Laura is perfectly able to understand short sentences expressing actions, such as "shut the door," "give me a book," or

as she expresses it, "shut door," "give book;" for she understands the meaning of "the" as little as a child just beginning to speak, who puts in "the" and "me" only from imitation. When she is left alone, she seems quite happy with knitting and sewing, and can occupy herself for hours. If she has nothing to do, she entertains herself apparently with imaginary dialogues, or the freshening of past impressions. She counts with her fingers, or spells the names of things lately learned, according to the finger-alphabet of the deaf and dumb. In these solitary dialogues with herself, she reflects and draws conclusions. If she spells a word wrongly with the fingers of her right hand, she immediately strikes it with the left, as a token of disapprobation, as her teacher is accustomed to do; but if she spells it rightly, she strokes her hand and looks pleased. Sometimes she spells a word wrongly with the left hand on purpose, looks roguishly for a moment, and laughs, and then strikes the left hand with the right, as if she wanted to correct it.

Dr. Howe wrote to me as follows, in September, 1839, about his pupil, who is now ten years old:—"The little Laura now possesses a great stock of words, which increases rapidly, as she has an inextinguishable thirst for knowledge, and incessantly asks for the names of things, and invents new sentences. Some of these sentences are very remarkable, and, being written down by a judicious and faithful teacher, they are preserved for a future time. I am of opinion that the observation of the unfolding of her intellectual powers will throw much light upon many psychological questions. She has lately began to learn to write with a pencil. She can now not only write her own name, but also short sentences composed by herself. She has apparently arrived at the power of communicating, in this manner, the thoughts of her own mind to the mind of another. No words are capable of giving you an idea of this attractive child, whose countenance beams with mind, whose motions are refined and graceful, who is always zealously employed in learning something new, while passing her delicate fingers over some new and surprising object; or else she sports among her blind fellow-sufferers as soft as a lamb. The fineness and sharpness of her sense of feeling can be equalled only by the wonderful accuracy and retentiveness of her memory. All these things, however, are only physical*, and are to be found in Julia Brace, and, perhaps, in other blind persons.

* Surely Dr. Howe is mistaken here; neither the goodness of her memory, nor the intelligent expression of her face, can be considered merely physical.—TRANSLATOR.

But that a girl perfectly blind, dumb, and without the sense of smell from her childhood, should begin to be educated at the age of eight, and in two years should be able to use an artificial language, and compose and express sentences, is wonderful and unprecedented, and shows the powers and resources of the human mind.* —*Zeitschrift für die gesammte Medicin*, Jan. 1840.

ON THE FORMATION OF CANCER OF THE VEINS,

AND THE POSSIBILITY OF COMMUNICATING
CARCINOMA FROM MEN TO ANIMALS.*

By DR. B. LANGENBECK, of Göttingen.

LATE investigations, and especially those of Carswell and Cruveilhier, have shewn that the occurrence of cancer within the veins is by no means rare; and the latter has found it so frequently, that he has come to the opinion that all cancers are originally developed in the venous capillaries. But, however frequently the veins may be the seat of carcinoma when the uterus is affected with that disease, yet in some cases they are undoubtedly quite healthy, and I therefore cannot coincide with Cruveilhier's opinion. I am rather inclined to regard the frequent occurrence of carcinoma in the veins as in most cases something secondary, like phlebitis, a disease which is also frequently joined with carcinoma, and especially with carcinoma of the uterus.

But, with however little confidence it can be at present held, that the capillary veins are the seat of origin in all cases of primary cancer, they are still very frequently to be regarded as the seat of the development of secondary carcinoma, and I would even hold, that in all cases in which a primary cancer exists, or has existed, and in which secondary cancer appears in some other part of the body, it is constantly developed from the capillary vessels, (I will not say veins).

The answer to the following questions appeared to me of the highest importance. How does the matter of cancer get into the veins, and how does cancer develop itself within these vessels? One might expect either—1st. That the disease forms as a cancerous degeneration of the walls of the veins, which are, no doubt, subject to the affection like all other tissues. But against this idea is the fact, that in almost all cases of cancer of the veins, the

disease is connected with the internal as well as the external surface of the vessel: or 2nd, we might conceive that the cancerous matter grows from without inwards into the cavity of the vein; but this could account only for those cases in which the veins immediately adjacent to a cancerous mass are diseased, but not for those in which the veins at a distance are affected: or 3rd, it might be, that separated fragments of a cancer pass into the veins destroyed by ulceration, and accumulate at some part of their interior; but in this case it would be difficult to imagine how the masses of cancer within the veins should (as they often evidently do) possess vessels.

The author considering each of these modes of explanation equally unsatisfactory, proceeds as follows. The cancerous matter which I have found in the veins lies in part quite loosely in them, without any connection with their walls, and is in part slightly adherent to their internal surface; and lastly, in part it forms one mass with their walls, which are in like manner converted into carcinomatous tissue. The origin of these differences remained for a long time obscure to my mind; but two cases of incipient carcinoma of the lungs, which were developed secondarily to carcinoma of the uterus, completely explained it. I convinced myself that the development of the cancer of the veins depends on that most remarkable property which the minutest cancerous molecules, the microscopic cancer-cells, possess, of developing themselves into cancerous tumors even when they are completely isolated, and without any organic connection with each other in the circulation.

The development and the growth of carcinoma, as well probably as of all morbid tissues connected with the organism, depends, as is well known, on the growth of simple cells, and takes place according to the same laws which Schleiden first proved in plants, and which Schwann has shewn to obtain in the normal animal tissues, and Müller in many morbid structures. The analogy of the mode of growth of all organic structures, which is so clearly proved by the investigations of these authors, is remarkably confirmed by the fact, which I have observed, that the germ-cells of a cancerous tumor, introduced separately into the fluids of the body, or passing accidentally into the circulation, may develop themselves independently, or in any part of the capillary system, into carcinomatous tumors, just as, in the lower plants, any cell separated from the plant may continue to grow independently.

Both the cases from which the author was enabled to draw this conclusion were cancers of the uterus. In one, nearly the

* The author by the terms *cancer* and *carcinoma*, appears to mean the whole family of malignant tumors; his cases relate chiefly to the medullary or encephaloid species.

whole uterus was destroyed by ulceration, and a recto-vaginal fistula had formed. In the other, only the cervix uteri was destroyed, and it was converted into an ulcer with callous margins. In the bodies of both patients, there were found in the uterine and pelvic veins light yellowish-red granular coagula, (the *matieres cancéreuses* of Cruveilhier) consisting of soft fibrine, coagulum, pus-globules, and small cancer-cells, whose diameter was twice as great as that of the pus-globules. The greater part of the coagulum was formed of very small, rather long, rounded transparent granules, half as large as blood-globules, and in every respect similar to the finely granular matter which one finds in the simple microscopic cancer-cells, so that I could not but regard them as the contents of destroyed cancer-cells set free. The iliac veins, the inferior cava, and the right side of the heart, were full of dark fluid blood; in that in the veins I found with the microscope granular cells with very distinct yellow-coloured nuclei, and a quantity of the fine granules which formed the principal part of the coagula in the hypogastric veins. In the blood of the right side of the heart I detected, with the naked eye, yellowish-red soft coagula, consisting of the same microscopic elements as the coagula of the pelvic veins. When I opened the pulmonary artery from the right side of the heart, I found in it the same reddish-yellow granular coagula as in those veins, only that here they appeared much firmer, and in the finer branches of the pulmonary artery were here and there distinctly united with the inner surface of the vessels. In the larger branches of the pulmonary artery, these coagula lay completely free, and partly filled the cavity of the vessel; but the finer the divisions of the artery became, the more completely did the vessels seem blocked up, and the more intimate was the union of the coagula with their walls. Under the microscope, these coagula were found to consist almost entirely of large cancer cells, of which the majority seemed five or six times as large as blood globules, and which were in no respect distinguished by their form from the cells in the tissue of the cancer of the uterus.

These coagula consisting of particles of cancer in the pulmonary artery, admit of a two fold explanation. Either, 1st, they were merely dead aggregations of separated particles of the cancer of the uterus, which had passed into the circulation through the ulcerated and open uterine veins, and had proceeded with the blood through the right side of the heart into the pulmonary artery, and accumulated in its smaller branches, (but to this view the circumstance is opposed that the uterine and hypogastric veins contained exactly similar

coagula, but which were much softer than those in the pulmonary artery, and had nowhere any connection with the walls of the vessels, and were composed of a number of smaller cancer-cells, and only in part of nuclei); or, 2ndly, these coagula were true cancers in the course of development and vital growth, whose form only appeared somewhat modified by the adjacent parts, the walls of the vessels. In favour of this view was the fact of the more complete formation of the cancer-cells in these coagula in the pulmonary artery, and their complete union with part of the walls of the vessels. Besides, when I traced the coagula into the minutest branches of the pulmonary artery, I came upon small flattened roundish cancers at the surface of the lungs, just under the pleura, into which I could trace small branches of the pulmonary artery completely filled with cancerous matter. In the neighbourhood of these incipient cancers, the coagula were so intimately united with the walls of the vessels, that they could not be distinguished from one another, but presented beneath the microscope a homogeneous cancerous tissue. But when the vessels passed into the small cancerous masses, then they completely lost their cylindrical form, by the growth of the cancerous structure through their walls. With the exception of the small cancers, of which there were ten or twelve in each, the tissue of the lungs was perfectly normal, though from the obstruction to the pulmonary circulation very œdematous.

I think it is very probable that, in most cases, cancer of the lungs develops itself within the branches of the pulmonary artery, from molecules of cancer which have passed from some primary cancer into the venous blood. Cancer of some other part of the body almost constantly precedes its development in the lungs; and the cases of primary cancer of the lungs are extremely rare. Bayle never saw but one, and Bouillaud only two; and Andral has never seen a case in which the lungs alone were affected.

That the minutest portions of a cancerous tumor, the cancer-cells, still possess the power of developing themselves independently into cancerous tumors, though separated from their original stock, the primary cancer, and planted on a foreign soil, can scarcely appear strange when we remember that the germ of the ovum, itself nothing but a cell, and, in fact, remarkably like a large cancer-cell, separates after conception from the ovary, to be developed independently in the uterus, or quite away from the maternal body. Like the germ of the ovum, every individual cancer-cell must be regarded as an organism endowed with vital power and capa-

bility of development, which, even when separated from all organic connection with its original soil, can yet continue to grow independently, so long as it is in the neighbourhood and under the influence of living organic tissues.

It was of considerable interest for me to determine whether cancer-cells, introduced into the circulation of an individual of a different species, would develop themselves into cancerous tumors in the capillary vessels. The endeavours of Alibert to produce cancer in animals and men by inoculating them with cancerous ichor, were, it is well known, ineffectual; and I repeated the experiment several times, both in dogs and rabbits, in vain. But if my observations on the development of cancerous tumors from simple cancer-cells were correct, it was clear that the seeds of the disease were in them only, and that a communication of cancer could be effected by nothing but them. This being assumed, it was explicable why the experiments of inoculation with the ichor had failed; for in it, as it is commonly taken, no cancerous molecules are ever found. I therefore determined to introduce some cancer-cells from recently extirpated human cancer, into the circulation of animals. Several rabbits, into whose external jugular or saphena veins I introduced fluid from fresh carcinoma, died between 12 and 24 hours after, from a remarkable obstruction which the injected fluid had caused in the capillaries of their lungs; for all died with dyspnoea, and all their lungs exhibited a considerable number of small ecchymoses. But, contrary to my expectation, the following experiment on a dog was important in its results:—

I took eight ounces of blood from the femoral artery of a large, strong, two-year old dog, and removed its fibrine by stirring. I then took about half an ounce of a whitish cancerous fluid, which had been scraped from the cut surface of an enormous medullary cancer, just removed from a young man's arm, and carefully purifying it from all the pieces of the tumor that were mixed with it, I mixed it with the defibrinated blood, and injected it into the femoral vein of the same limb. Two days afterwards, the dog was ill and feverish, but had no affection of the respiratory organs, and in eighteen days he was quite well. Some time afterwards, he began to grow very thin, and on the 10th of August I killed him by pithing. On opening the chest, the lungs were found apparently healthy; but on the anterior surface of their upper lobes there were two or three clear-bluish, flattened, and rounded tumors, of the size of a lentil, which were remarkably like the small cancers of the human lung described above, and, under the microscope,

presented the texture of cancer. In the substance of the middle lobe of the left lung there was a large, hard, circumscribed tumor, of the size of a large field-bean. The pulmonary tissue around it seemed quite healthy; but, on its cut surface, it presented all the appearance of a cancerous tubercle, consisting of a hard, homogeneous, clear-bluish substance, in which there were here and there points of blood, which, under the microscope, looked like convoluted capillaries.

Now, as this tumor possessed a peculiar and definite tissue, and was organised with blood vessels, it could not possibly be a mere accumulation of the cancerous matter injected into the blood, but it must, if it were of a cancerous nature, have been formed by the growth and continued development of the cancerous molecules. The microscopic examination of the fresh tumor left no doubt whatever of its carcinomatous nature. It consisted of large, clear, juicy fibres, of the thickness of primitive muscular fibres, between which cells of 1-100th of a line in diameter were thickly scattered. In the clear fluid which could be squeezed out of it there were smaller cells, partly of the size of blood globules, and partly only half as large as them; and, besides, it contained a quantity of fat. The same microscopic elements were found in the medullary cancer of the humerus from which the injected fluid was taken, and the similarity in structure of the two tumors could not be doubted when they were compared with each other. The cancer of the lungs in the dog was distinguished from that of the upper arm of the man only by its greater hardness, its larger fibres, and the large, dark, granular cells, with distinct nuclei, which were here and there scattered in it, just as I have so often seen them in scirrhus of internal organs, though never in medullary tumors. The cancer-cells, therefore, appear to be a new development from the injected substance: and hence, I think, they confirm the idea, that the medullary and the hard cancer are only different forms of essentially the same disease, and may pass the one into the other.

In the great frequency of cancerous diseases, it will be an easy matter to repeat and vary the experiments I have instituted, and, without doubt, they will succeed alike with all the varieties of cancer. It is still to be determined, how far the vitality of the cancer-cells is dependent on the life of the organism; and whether cancer-cells, taken from the cancerous tumors of a dead body, can develop themselves into carcinomatous tumors, as well as those from cancerous tumors just removed from the living body, and still warm.—*Schmidt's Jahrbücher*, Bd. xxv. hft. 1, p. 99.

ADMISSION OF SPECIALITIES INTO
THE HOSPITALS OF PARIS.

THE following case, and the remarks contained in the protest to which it has led, afford a good confirmation of the observations which we lately made, in reference to the impropriety of establishing separate institutions for the treatment of certain special diseases:—

The French medical journals announced last February the nomination of M. Leroy d'Etiolles, to a place at the Central Office of the Hospitals, exclusively appropriated to the external treatment of diseases of the urinary passages; an office created by the general council for hospitals, and given to M. Leroy without concours.

As soon as the surgeons of the several hospitals and of the Central Office became acquainted with the new appointment, they took the opportunity to protest against the introduction of specialities into the service of the hospitals. To their protest, however, which obtained an unanimous assent from all the officers of these institutions, the council general answered that the nomination of M. Leroy d'Etiolles having been determined on, and signed for a month, could not be revoked; and he has therefore retained his office.

We pass over the remarks of the editor of the journal, from which we extract this notice, (the Archives Général de Médecine, Mars, 1840,) which are rather directed against the breach in the system of concours than against the system of specialities, and present the following abstract of that part of the protest which relates to the latter subject:—

The Hospital-surgeons of Paris being informed that M. Leroy d'Etiolles has addressed to you a request to be admitted without concours among the surgeons of the Central Office, and to create for him, in that establishment, a special department for the diseases of the urinary passages, have thought it their duty to submit some observations to your intelligence and justice.

In the first place, they ask themselves what are to be the objects of the new department? are they to be the special treatment of stone by lithotripsy, or is it to include all the affections of the urinary passages? The first supposition cannot be admitted, for it can never enter into any one's mind that so serious an operation as lithotripsy should be undertaken, without a consultation, on patients who have come on foot, and who are obliged at once to return home, and remain there, left to all the chances of the accidents that may come on. Nor is the second supposition more favourable to the appointment that is requested; for if some of the diseases of the urinary passages are sufficiently slight to be cured by the means

administered after a single consultation, there is no need of changing the system already established. Every day, in every hospital, and, therefore, in every quarter of Paris, assistance of this kind is afforded to sufferers, by surgeons who have stood the test of concours, and who possess the confidence of the administration. We rejoice to think, that with these two guarantees, it cannot be supposed that the treatment of the diseases of the urinary passages is neglected in the hospitals, or that it can be better known elsewhere. Need it be added that by means of the assistance thus afforded in every district of the capital, every patient receives, without inconvenience, and almost without loss of time, the aid which he requires. * * * * But it is our duty to add that the extent to which specialities are being carried in the hospitals of Paris, is altogether contrary to the interests of the patients and of science. We know with what prejudice the question of specialities generally is judged of in the world. In vain do the great majority of men of science declare themselves against it; the world dares not deny their competency to judge, but it accuses them of partiality. But it must be said that the reasons on which our convictions on this point are founded, rise to a period beyond the present time; the whole history of surgery deposes that the art has constantly suffered by being broken up, and that it has been saved only by great minds remodelling it in its perfect and entire state. In the middle ages there were a multitude of specialities; some for the eyes, others for the stone, and so on. The cutters for hernia have left a fearful reputation; the bone-setters were reckoned among the scourges of the provinces. It was at Paris, and especially in the hospitals of Paris, that, by the effort of time and the genius of some few men, this brilliant synthesis of our art was effected; it should not be for the same hospitals to give the signal for fresh anarchy. It vain is it pretended that the times are not to be compared; without going further back than the second half of the last century, there were not wanting then special surgeons; and if one asks, what they have effected, one too often finds nothing but a confused assemblage of formulas for secret remedies, supported by all the forms of charlatanism.

No doubt there are men, to whom such reproaches cannot be applied; but we know also that really powerful intellects never consent to confine themselves within the narrow circle of specialities; and that surgery owes none of its progress to those who have studied but one of its branches. The restorer of ophthalmology was Scarpa; the surgeons who have done most for the treatment of hernia, are Scarpa, Astley Cooper, Dupuytren, not to mention any

of our colleagues still living. The practitioners who have thrown most light on the diagnosis and therapeutics of the diseases of the urinary passages, are Chopart, Desault, Dubois, Boyer, &c.

We hope, therefore, that the council-general of the hospitals will be pleased to refuse the creation of a new place, and thus to oppose a useless innovation, injurious to the interests of the patients, and prejudicial to the progress of surgery.

Signed by MM. Roux, Marjolin, Baffos, Paul Dubois, Cullerier, J. Cloquet, Breschet, Lisfranc, Sanson, (ainé) Auvity, Blandin, Gerdy, Velpeau, Berard, (ainé) Jobert, Laugier, Boyer, Berard, (jeune) Ricord, Morrod, Robert, Michon, Guersent, (fils) Vidal, Lenoir, Malgaigne, Huguier, Rigaud, Nelaton.

COLLEGE OF PHYSICIANS.

To the Editor of the Medical Gazette.

SIR,

A LETTER signed "M.D. Edin. et Leyden," which appeared in your journal a few weeks since, makes two assertions; first, that the College of Physicians, London, has the power of conferring the title of Doctor of Medicine; secondly, that the College has declared that it will grant the above title to all who may become its licentiates or extra-licentiates. The reply in your last number has clearly and triumphantly shewn that the College has no power whatever to confer medical degrees; but the assertion made by "M.D. Edin. et Leyden," that the College has declared that it will grant the title of Doctor to its extra-licentiates, remains still uncontradicted. As this assertion is unjust to the College, and has no foundation in truth, I trust you will permit me to prove it to be so.

The College, in its circular of Dec. 22d, 1838, states that, "it is prepared to address by the same application" all who have passed the various strict examinations for licentiate "before the Censors' Board," whether they have a degree or not; but it has not announced that it will bestow the same title on the extra-licentiates who go through a very trifling examination before the elects of the College; therefore it is evident, that the extra-licentiates have no ground whatever for assuming to themselves the title of doctor, in consequence of their extra license; and, consequently, that it is a palpable mis-statement on the part of your correspondent "M.D. Edin. et Leyden," to assert "that the College do grant the degree and title of Doctor of Medicine to those who pass the examination for licentiates or extra-licentiates" of that Corporation.—I am, sir, &c.

M.D. Oxon.

May 10, 1840.

[We believe that our correspondents of

this and last week are both mistaken, and that the College of Physicians has precisely the same right to make Doctors in Medicine as the Inns of Court to make Doctors in Law. It is, however, the affair of the Fellows of the College of Physicians, not ours; and to them we leave it.—*Ed. Gaz*]

TESTIMONIAL TO

W. FERGUSSON, ESQ.

Professor of Surgery in King's College, London.

ON Monday, the 4th instant, a splendid testimonial was presented to this gentleman, in his class-room, Infirmary-street, on the occasion of his leaving Edinburgh, to enter on the duties of Professor of Surgery in King's College, London. The tribute consisted of a large, massive, silver tray, of exquisite workmanship, the gift of a numerous body of the medical profession of this city, and several other friends; as also of a chaste and beautiful claret jug, of the same material, being the gift of the students who attended Mr. Fergusson's class during the past session. Both those pieces bore suitable inscriptions. Professor Lizars was deputed to present the first; and Mr. Adams, the testimonial of himself and his fellow-students: which they accordingly did, after interesting and appropriate addresses.—*Caledonian Mercury*.

WEEKLY ACCOUNT OF BURIALS.

From BILLS of MORTALITY, May 12, 1840.

Abscess	3	Whooping Cough . .	5
Age and Debility . .	20	Inflammation . . .	7
Apoplexy	2	Bowels & Stomach .	6
Asthma	6	Brain	3
Childbirth	1	Lungs and Pleura .	2
Consumption	29	Influenza	1
Convulsions	14	Liver, [diseased] . .	1
Croup	1	Measles	6
Dentition	8	Mortification . . .	4
Diabetes	1	Paralysis	3
Diarrhœa	1	Small-pox	1
Dropsy	4	Sore Throat & Quinsy	1
Dropsy in the Brain	5	Tumor	1
Erysipelas	1	Unknown Causes .	38
Fever	8		
Fever, Scarlet . . .	8	Casualties	7

Decrease of Burials, as compared with
the preceding week } 53

METEOROLOGICAL JOURNAL.

May.	Thermometer.	Barometer.
Wednesday 6	from 46 to 67	29.84 to 29.81
Thursday 7	49 67	29.73 29.70
Friday . . 8	50 68	29.67 29.59
Saturday . 9	51 67	29.51 29.44
Sunday . . 10	52 67	29.37 29.41
Monday . . 11	50 58	29.47 29.39
Tuesday . . 12	50 63	29.51 29.65

Wind N.E. on the 6th; S.W. on the 7th and following day; S.E. on the 9th; W. on the 10th; N. on the 11th; S.E. and N.E. on the 12th.

Except the afternoons of the 6th and 8th generally cloudy, with frequent showers of rain; distant thunder, accompanied with rain in the S.W. and N.W. on the evening of the 10th.

Rain fallen, .405 of an inch.

WILSON & OOLLY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, MAY 22, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

—
FRACTURES continued.—General treatment—
Nasal bones—Malar bones—Superior maxillary bones—Inferior maxillary bone.

Treatment.—With respect to the means for removing the patient from the place where the accident has been received to the bed upon which he is to remain while under treatment, I shall presume that the intelligence of the practitioner will enable him to do what is best under the particular circumstances of each case. The bed should not be too wide, or it will be found inconvenient to the medical attendant in dressing, bandaging, and so on. A feather bed is too soft, and too easily yields to the weight of the body; a mattress will answer the purpose better. At all events, if a feather bed be used, a good mattress should sustain it. In many cases boards will more completely attain the object. But whatever care may be bestowed on the bed, it ends by becoming unequal, and, from other causes, it also becomes necessary to transport the patient to another. Many means and many beds have been invented to overcome these inconveniences, but they are not completely removed, and such beds cannot be used in the treatment of the majority of cases.

There are three principles to be kept steadily in mind in the treatment of fractures: the first is to procure exact reduction; the second is to retain the parts in proper contact so long as may be necessary for consolidation; the third is to prevent

the development, or to relieve ulterior accidents. It is true that in some cases there is no displacement; then the first principle does not apply. Reduction is commonly obtained by extension and counter-extension, to which may be added coaptation. The first consists in dragging upon the limb by its inferior extremity, for the purpose of producing as much elongation as it will admit of, the fragments being properly reduced. By counter-extension we understand the means which are used to maintain the trunk, and the part of the limb above the fracture, in a state of immobility. By coaptation we mean the reduction of the fragments, by the application of the hand upon the fractured point.

Extension and counter-extension should be applied as far as possible from the fractured point, for the purpose of avoiding compression, which often induces in the muscles spasmodic contraction, by which the displacement may be increased, and reduction rendered more difficult. Thus, in a fracture of the leg, the extension is applied upon the foot, counter-extension upon the thigh; in fracture of the thigh, extension is applied upon the leg, counter-extension upon the pelvis.

Pott recommended a different course: he placed the limb in a state of semi-flexion, before attempting reduction, and made extension and counter-extension upon the extremities of the bones. His object in this was to place the limb in such a position that all the muscles which are inserted in the fractured bone may be relaxed, so as to offer no obstacle to reduction. The method of reducing fractures, by placing the limb in the semi-flexed position, is not so free from objection as some persons believe. What is gained by the relaxation of one set of muscles, is nearly counter-balanced by the tension of others. Still, if in the particular case we can by semi-flexion relax the more power-

ful, a manifest advantage is obtained. In fractures of the leg, the muscles of the calf are powerful in producing displacement; a semi-flexed position in which they are relaxed, would certainly be the most favourable to reduction, and also during the after treatment.

In the reduction of fractures, machines for making extension are exploded; the hands are almost always found to be sufficient. Always extension should be gradually and steadily made; if it be made suddenly and violently, the muscular fibres may be ruptured and otherwise injured. It is desirable, during the time extension is making, to endeavour to distract the patient, to direct his attention to something unconnected with the business of reduction, as it tends to lessen muscular contraction at the part. When extension has been carried far enough, the hands should be applied to the part. It may happen that the attempts to reduce a fracture will be unsuccessful, either because extension has been too suddenly applied, and spasmodic action excited, or because muscular contraction is produced by pain or irritation. In the first case the remedy is easily applied; in the second it may be necessary to bleed or give opium.

Reduction, however, is not the difficulty most commonly experienced in fractures, but the power to maintain it until nature shall have provided against displacement. The means commonly employed for the purpose, are a proper position, rest, bandages, splints, and a great variety of apparatus. It is of great importance to place the patient and the limb in a convenient position; supposing the injury to affect the leg, it must be equally and comfortably supported along its whole length; if it be applied injudiciously, two accidents may happen, a new displacement and inflammation, or gangrene at the points where pressure has been so made. Whatever be the position we give the limb, whether semi-flexed or extended, it must be maintained at perfect rest during the time necessary for consolidation. If motion be experienced at the fractured point, the formation of callus will be interfered with, and the cure may be interrupted. Ordinary bandages are comparatively useless, as means of maintaining quiet; but they are of use in supporting compresses, upon which cold or other applications may be made. To maintain reduction, pillows, junks, splints, and certain other apparatus, are employed. The objection usually made to junks is that they are cylindrical, too narrow, and too easily displaced; but this objection might be removed, for the cylindrical form is not absolutely necessary. Splints variously modified are most commonly employed for maintaining the

reduced fragments; they should be strong enough to offer sufficient resistance, and long enough to remove constriction from the part. They are made of wood, bark, leather, iron, pasteboard, and other substances. They may be as long as the injured bone, or as the limb itself; they should not be directly in contact with projecting points. In some fractures a single splint is used, in others two, in others three, or even four. Pasteboard splints are used in certain cases, where the consolidation is long about. They are always moistened before they are applied; they thus adapt themselves perfectly to the form of the limb, and in drying become perfectly firm and hard, and partake much of the character of the immoveable apparatus. But probably the best form of paper splint is that which is formed by applying upon the limb a certain number of layers of brown paper, between each of which a layer of paste, gum, dextrine, or some similar substance is applied, each layer becoming dry before another is applied; this becoming perfectly modelled upon the limb, can, therefore, make no unequal pressure, and may be removed at will.

Whether we apply the one or the other, (taking care that it is neither too lightly nor too tightly bound,) we should interfere with it as rarely possible. Still it must be watched, tightened if necessary, and the apparatus should even be removed to ascertain whether the fragments have been properly sustained; this should be done at the end of ten days or a fortnight from its first application, and again before the apparatus is dispensed with. It is practice alone which can teach us as to the constriction which it is necessary to apply. It often occurs, especially in fractures of the leg, that the patient experiences during the night spasmodic contractions, by which he is awake, by which the apparatus may be somewhat deranged, and the fragments displaced; this must be particularly attended to. Some surgeons recommend an almost daily removal of the apparatus, to be assured that all goes well. This practice I decidedly object to; it is opposed to that important principle—the necessity of absolute rest. Another treatment, the opposite to that, is the “immoveable treatment,” in use from a very early period among the Arabs and Greeks, and employed in Switzerland, Spain, and other countries. In France the principle has been largely tested by Larrey. In this case the apparatus is not removed from the time of its application to the moment of cure, in conformity with that principle that the more complete the repose the more rapid will be the consolidation. The apparatus of Larrey, which is applied

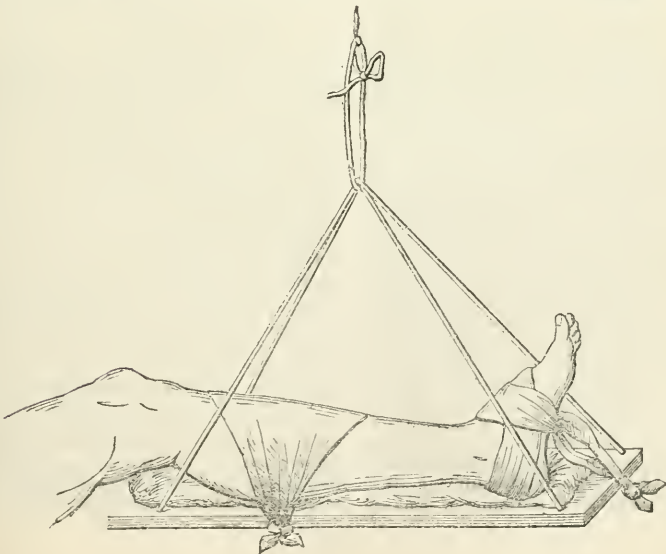
equally to compound and simple fractures, is formed by placing a couple of junks at the sides of the limb; they are secured by means of linen cloths of the length, or rather more, of the fractured bone; these are wound around the limb, and secured by ligatures. The whole apparatus is saturated with a mixture of white of egg, camphorated spirit, and goulard water. At the end of twenty-four to thirty-six hours the apparatus, so applied, becomes perfectly hard, and, as it were, a solid piece: to attain this quality, it must not, of course, be covered up, or it remains soft. Once dry, it effectually prevents displacement, being moulded on the part.

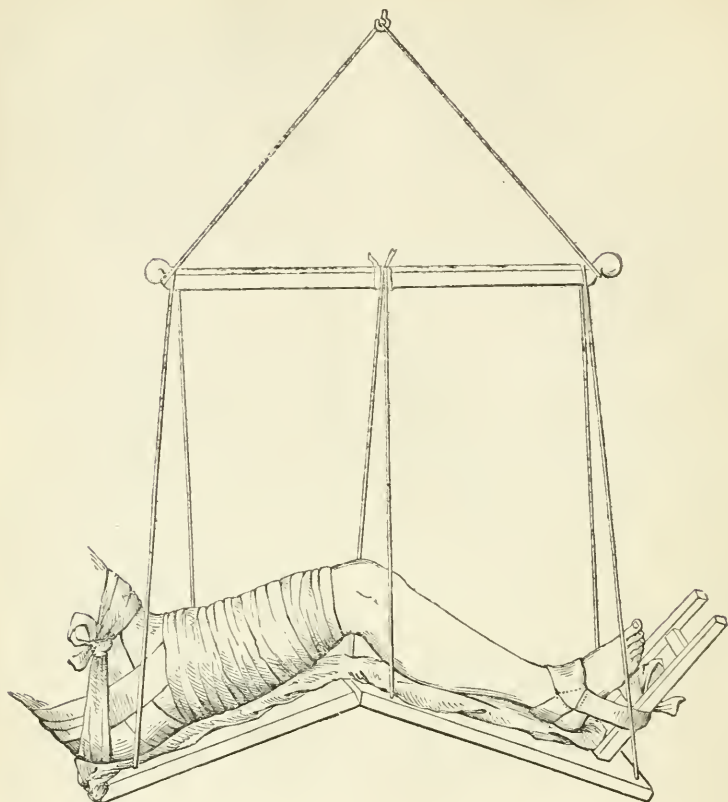
Certain objections, however, are made to this plan; that, as thirty or more hours pass before the apparatus is firm, the fragments may during that time be displaced; that, if applied when there is much tumefaction, when that subsides, there must be a considerable interval between the apparatus and the limb: there is clearly truth in these objections, but they are not weighty. In any mode of treatment, it is not commonly during the first three days that displacement occurs; it is later, when the patient gets restless; it is rarely that the subsidence leaves a very great interval, and by that time the callus has acquired some power; if there were force in this objection, it might be obviated by allowing the swelling to subside before the apparatus is applied. And against any theoretical objection, as to gangrene, and so on, the results of the treatment may be opposed. Its advantages must be obvious; it admits of moving the patient from his bed by the third day, and gets rid

of the inconveniences attendant upon confinement. The method of Larrey has been much simplified by Seutin and others. The method of Seutin was to place around the limb three, four, or more layers of bandaging, between each of which was a layer of starch. When dry, this constituted a firm splint exactly moulded upon the leg. The strip of paper plan which I have alluded to is a modification of the same system. So also is the mode employed in very early times, and revived by Dieffenbach, of surrounding the limb with plaster of Paris.

I am of opinion that in a considerable number of cases it is desirable, from week to week, to ascertain the condition of the part; at the same time I decidedly object to a frequent interference. Therefore it is that I am disposed to object to any system which places difficulties in the way of such supervision; and the plans of Larrey, Seutin, and Dieffenbach, certainly are open to this objection, though, at the same time, I readily admit that, in a large number of cases, they are unexceptionable. But I look to the strips of paper or papier maché method as the one which ought to be most generally used.

We must now consider another system of treating fractures which has been, within a few years, much employed by Santer of Constance (*Annweisung*, &c. 1812, 8vo. fig.) and by Mayor, of Lausanne (*Memoire sur l'Hyponarthecie*, 1821, 8vo.) This method consists in the use of an instrument like one side of an old fashioned scales—that is, a flat oblong board suspended by four cords at its corners; upon this board a pillow is placed,





and it is raised or lowered to the required elevation by pullies. The board should be two or three inches longer than the limb, and from six to nine inches wide—adapted to it is a small mattress stuffed with horse-hair, chaff, or other substance, which must be thick enough to prevent the possibility of improper pressure. The limb being placed upon it, it is surrounded by a broad piece of linen, which is also passed around the apparatus, so as to prevent the one moving without the other. If the fragments tend to ride, this may be prevented by making extension, and securing both extremities of the limb to the extremities of the board. This apparatus is susceptible of various modifications by which it may be adapted to the different limbs. Munaret has proposed a modification which seems to me a decided improvement. He substitutes for the board a gutter of painted iron adapted to each limb. This is unquestionably a very valuable invention; it admits of making

the necessary applications to the part without in any way disturbing it, and it allows of a changing position without inconvenience. Still it is doubtful whether this system will get into general use; for I cannot divest my mind of the conviction that this mode, as well as a still more unsafe one lately recommended in this country, affords more facility for displacement than the other methods of which I have spoken.

The fracture has been reduced—the means of preventing displacement are applied, but there are other circumstances to be attended to. You must anticipate or watch the advent of accidents—consequences of the injury. If the patient be young or vigorous, and there be much tumefaction, it may be advisable to bleed; but this should not be heedlessly done, nor as a matter of routine, because it is probable that callus is as much more promptly formed as the circulation is more energetic, and the strength good. As soon as inflammatory symptoms begin to subside, the

diet should be improved. If there be constipation, which is commonly the case, it must be relieved by the gentlest means, because a frequent call to stool will be likely to displace the fragments. When the consolidation is completed, it is always well to allow a couple of days to pass after the removal of the apparatus before the limb is used. There is always a certain feebleness and rigidity of the limb, depending, to a considerable extent, upon the splints and bandages which have interfered with the circulation, and have prevented muscular action. This state is relieved by frictions, baths, and douches; but the effect is not soon got rid of. Occasionally a very uncomfortable symptom is long felt after a fracture; a pain is experienced at the part after walking; and sometimes the muscles of the part act spasmodically. I have known two cases in which this state was very troublesome; but it yielded at last to blisters and an issue.

COMPOUND FRACTURE.—In compound fractures the treatment is different; the tumefaction and disorganization of the part may be great, and may require a very decided course of treatment. But here, at the threshold, we are met by a much debated question—should we at once proceed with the reduction, or should we wait, until by antiphlogistic means this condition is abated. It is thought by some persons that the displaced fragments are a constant source of annoyance and irritation; others believe that the violence which may be done in attempting reduction, will be more injurious than useful, by greatly increasing the inflammation. Like all other similar questions the difficulty is got rid of by taking a middle course, sometimes following one, sometimes the other; and it is difficult to lay down a rule on the subject. There is another point to which I must direct your attention, phlyctenæ are often seen in cases of fracture; they contain a yellowish serous fluid, sometimes it is brown or bloody, but they do not indicate the existence or even the approach of gangrene, they are only signs of contusion. You must not remove the pellicle which covers them or they will be painful; they may be punctured with a fine needle, and covered with simple dressing. If the integument be disorganized, the inflammation will excite suppurative action; if it establish a communication with the fracture, it may be serious; if not, it may be treated like a common wound. In the latter case it will be wise to limit the inflammatory action as much possible, or it may interfere with the progress of consolidation. When the wound communicates with the fracture, if it be the result of a cutting instrument, uncomplicated with

hæmorrhage or extravasated blood, we should endeavour to procure immediate union, and reduce it to the condition of a simple fracture; but in a majority of cases the result will not be obtained, and long suffering will be the consequence. It is not long since surgeons thought compound fractures cases for amputation; in the present day we regard them differently. And, although in this metropolis, the wholesale result may be very unfavourable, it is not the case in the provinces. If the wound have been occasioned by a fragment of bone, and the wound be not large nor much jagged, we may attempt union. If the fragment of bone be large and protruding, and the fracture transverse, it may be reduced, and we may pursue a similar course. If it cannot be reduced, the wound may be enlarged longitudinally, in the course of the vessels and nerves, as affording the best chance of avoiding them. If the extremity of the fragment be reduced, it will be wise to remove it with the saw, being careful to protect the soft parts; if there be many loose fragments, much after mischief may be prevented by removing them; and in either case bring the parts together, so as to afford the best chance of union. If the wound has been caused by the passage, over the limb, of a cart or other wheel, or indeed any similar contusing body, the bone will probably be comminuted, and the soft parts may be so much injured as to render immediate amputation necessary. Do not, however, proceed to amputate until you have well examined the injury, and estimated the probable power of repairation; and here a long experience is the safest guide. It is astonishing what an extent of injury may be repaired in young people. In cases where the contusion is very severe, the application of cold or iced water for the purpose of subduing inflammatory action, should not be heedlessly made; it may induce gangrene; if the contusion be violent, it is a most valuable application. It may be necessary to bleed generally and locally, for the purpose of subduing the mischief, but in doing so, you must not lose sight of my former caution. If the separation of a considerable slough lay bare a portion of bone, the suppuration will be abundant, the periosteum will be bathed in pus, and the probability of necrosis great; dressing should be frequent, and dry lint applied upon the part, to absorb the pus; with all our care it may burrow or take the course of tendons, and abscesses be developed at a distance. In this case it is necessary, by bandaging, position, and counter-openings, to procure the escape of this fluid. Often, after a long time, spiculæ of bone, necrosed or otherwise, will continue to be thrown off. It very often happens, that after a period

of many weeks, a time arrives that many patients are lost. A fragment of bone in the thigh, for instance, has remained in contact with the artery; at last it has ulcerated it, and a secondary hæmorrhage occurs. Pelletan describes such an occurrence at the end of seventy-five days. Or the suppuration may be so profuse as to exhaust the patient; or it may infect the system, and typhoid symptoms will be developed, and it may then be too late to amputate. To succeed in these cases, it must be practised immediately after the injury; when the inflammation is followed by gangrene, when suppuration has become so excessive as to occasion hectic, by which the life of the patient is threatened, it is often too late.

Supposing the fracture to be complicated by the wound of a large vessel, if there be no external wound, enormous tumefaction will be soon developed. This tumefaction will not be circumscribed, and the integument will rapidly acquire a violet colour. If a vein be wounded, after a short time it ceases to make progress, and the fluid may be absorbed, or it may be removed by incision; sometimes, if left to itself, it has terminated in abscess. If an artery be wounded, the extravasation continues, the tumefaction increases, and commonly a pulsation may be distinguished in it, isochronous with the motion of the heart. In this case we are rapidly threatened with gangrene. Formerly surgeons were accustomed to amputate, but the success was not great; and of late, the practice has been successfully introduced, of placing a ligature on the artery, at a distance from the injury.

But seldom it happens that nervous cords are injured in these accidents; and probably these are cases in which, now and then, we see tetanus developed; if the injury have been sufficient completely to destroy the nerve, we may have paralysis.

Larrey and the Spanish surgeons apply the immoveable apparatus in case of compound fracture, and allow them to keep their place up to the complete consolidation; no matter how much pus may be exhaled or how offensive may be the apparatus. There can be no doubt that to the military surgeon it is a matter of the first importance that the mode of treatment should afford the greatest possible facility for removing the patient; and in the field this treatment may be the best, but certainly it should be modified so as to admit of frequent examination and dressing; for instance, the Arabs cut out a portion of their apparatus, corresponding to the wound.

When a fracture is very near an articulation, it is wise to move the limb from time to time, to guard it against the chances of ankylosis.

Callus.—It is now time to consider the formation of that substance by which the fragments are preserved in contact, as well as that by which permanent union is accomplished. This matter, termed callus, is formed around the fragments in the following manner:—When a simple fracture happens, there is always a slight, often a very considerable, displacement, and that displacement must occasion a certain quantity of injury to the soft parts, and rupture a certain number of vessels, from which blood, in small or large quantity, will be extravasated, and will coagulate around the fragments. Soon this coagulum is broken down, and its more fluid part is absorbed; the vessels then pour out another kind of fluid, lymph; this lymph is poured into the injured parts as well as those in their vicinity, and a homogeneous mass, of a bulk corresponding very much with the quantity of inflammation, is formed. This mass soon becomes pervaded by vessels, which deposit here and there osseous matter; these increase in number until the whole mass becomes firm and gritty. A similar matter penetrates to a certain extent into the medullary canal, acquires a similar consistency; and thus are formed two natural obstacles to further displacement, an internal plug and an external splint. At first the deep-seated muscles or tendons, and other organs, are implicated in this external mass, gradually it lessens in bulk, and these organs are restored to freedom; as it lessens in bulk, it increases in density, and effectually prevents displacement. As soon as this provisional medium of union is formed, the patient may use the limb without apprehension. But still, at this time, although the restoration has proceeded thus far, although the new periosteum has become continuous with the old, if we saw longitudinally through the callus we shall find that the medium of union between the fragments is yet incomplete; and it is not until that is perfectly accomplished that the bone is reduced, by the absorbents, to its proper limits.

If the case be one of compound fracture and suppuration be established, the process of reparation varies; the fragments are covered with granulations; as soon as suppuration ceases they coalesce, lymph is found upon their surface, and union is completed; this granular mass is a matrix for the reception of calcareous matter, which gradually renders the mass of a bony consistency.

In a common case of simple fracture, the mass of callus does not acquire much density before the end of three weeks or a month; therefore it is we do not allow a patient to use the limb until after that period. But numberless circumstances occasion variations in the time of its occur-

rence. It is sooner brought about in children than in adults, their system being more vascular: thus, in a child, a fracture may be consolidated in twenty days, whilst the same result would not be obtained in an aged person, before the sixtieth to the seventieth day.

Fractures are more speedily enured in the upper than the lower extremities; this, of course, depends upon the influence of position upon the circulation.

Under many circumstances, the process of reparation is retarded; sometimes in a person apparently in the best health, this feature is observed. But there are circumstances under which these things are frequently seen: if you bleed and keep a patient on vegetable diet during the time of treatment, consolidation has been prevented. During pregnancy, the process is often retarded, but this is not an unvarying effect. Scorbutus exercises a very decided influence in opposition to consolidation. There is a species of bastard scorbutus, which sometimes occurs during the treatment of fractures, and exercises a similarly baneful influence. Syphilis and rickets occasionally produce similar effects. It is asserted that cancer exercises the same deleterious influence, but I know no good facts to support this opinion, though it is probably correct.

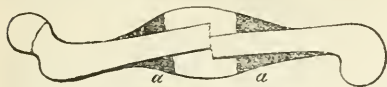
There are other causes more decidedly local in their nature; among these a want of coaptation in the fragments is the most marked, and even in this there is much caprice. Van Swieten knew a case in which four inches of the tibia had been removed, and its place supplied by a hard body, without any shortening of the limb. I have known a case in which, in a young man, five inches had been removed with a similar result. Lamotte mentions a similar case, in which six inches had been removed. I have known a case in which a large portion of the clavicle was removed and similarly repaired; but usually an artificial joint, or a fibrous representative, is the result. The absence of the necessary nutrition in one of the fragments, is another cause; possibly intracapsular fracture of the femur is an illustration of this kind. It is said, and the saying is supported by a few cases, that if in a case of fracture, it be necessary to tie the principal artery of the limb to restrain hæmorrhage, that the consolidation is interrupted. I have seen a very marked case, in which the same injury which fractured a man's leg injured the lower part of the spine; he lived five weeks, but there had been no effort at reparation. It is rare that osseous union is obtained in the patella and olecranon, but the fibrous medium is such as to admit of the performance of the ordinary functions of the part. Again, in intra-capsular fractures, if of the superior extremity, the neck of the humerus, for in-

stance, the functions of the part are after a time restored; in the neck of the femur, perfect restoration of the function of the part is extremely unfrequent.

Artificial Joints.—Supposing a false articulation to occur, an immoveable apparatus will sometimes bring about union. Walker applied blisters to the part without much success. The actual and potential canterics have been applied by Kirkbride and others. Some persons have cut down upon the bone, and applied, between the ends, various potential caustics, sometimes with success. Mayor once passed between the fragments the canula of a trocar, and left it there eight hours; through this canula, he introduced a stylet, heated to the temperature of boiling water;—the case succeeded. Hunter and others have advised that the fragments should be rubbed against each other to destroy the articulating surface; this rubbing must be violent and often repeated. All these means have been used with occasional success, and all have failed; whether these means, or any of them, should be employed previous to resorting to the painful operation of excision, is with some persons a matter of doubt; but I think it ought not to be. The seton, imagined by Physic, has been a good deal used, and with a fair share of success; his operation has been variously modified. Sommé passes a metallic ligature around the false joint, and tightens it until it passes fairly through it. The seton, occasionally, produces a speedy consolidation, but sometimes it is left in place for many weeks without effect.

In a lecture of Sir P. Crampton's, continued in the Dublin Press for Nov. 20, 1839, he says, in speaking of the seton as a means of curing artificial joint, "My friend and colleague, Mr. Rynd, has lately modified the operation. Instead of passing the seton between the ununited extremities, he merely passes it so close to, and in such a direction, as to be in contact with a considerable portion of their circumference. The inflammatory action thus created seems to be sufficient to set up the ossific process, for in the two cases which he has treated in this manner, the operation has been attended with the most complete success." I have no wish to detract from the merit of Mr. Rynd, but it is my duty to mention that, in Mr. Gulliver's report for 1835, he says, in speaking of the remedies for the cure of "preternatural joints," "they seem to have been exclusively directed to the broken extremities of the bone, a practice which I think is at variance with correct pathology; because that is precisely the situation in which the ossification is last set up, and, therefore, not the place where we might expect to incite the process." "The deposition of bony matter commences at points distant from

the extremities of the fracture: those points are marked *a, a* in the diagram.



It is at these points I would venture to propose, that the attention of surgeons should be directed, in the treatment of artificial joints. If the seton be used, I think there should be two of them placed at a proper distance from the line of fracture." Mr. Rynd's cases are very satisfactory, as confirming the correctness of Mr. Gulliver's views on the subject.

In 1760, White proposed for such cases a new remedy—*resection*; the operation is performed by cutting down upon the false joint, on the side opposite to that upon which the large vessels and nerves are found, and as near as may be where the bone is most superficial; the two extremities are then sawn off; sometimes only one is sawn off, and the other scraped; the parts are then brought together, and carefully maintained in contact until the consolidation is complete. Although the operation not unfrequently fails, yet as the cases of success are much more numerous, the operation fairly takes its place in surgical therapeutics.

It clearly should not be performed, neither should the seton, nor the direct cauterisation, be had recourse to, before other means, such as perfect immobility, blisters, and rubbing the ends, have been fairly tried. In most cases it will be advisable to employ the seton first; it causes less suffering and fewer accidents, and if we fail we can still recur to resection. I know so little of the application of the actual cautery in such cases, that I am not disposed to hazard an opinion upon the subject, further than to remark that in cases of fracture with complications, where a wound is in such a state as to require an energetic modification, the object may be attained by the cautery.

Deformed Union.—One point more remains to be considered: union may be obtained, but with considerable deformity; can this deformity be remedied when the bones are viciously consolidated? Fabricius ab Aquapendente, and Purmann, and at a later period, Osterlen, have maintained, that frequently the callus may be ruptured with success. Osterlen details eight cases in which the limb was restored. He ruptured the callus by pressing upon the projecting part, at the same time that forcible extension and counter-extension are practised. Weinhold proposed a remedy for such cases, by inserting a seton. In the case he detailed the callus was broken down by suppuration at the end of seven weeks, and the case did well.

Wasserfuhr, in such a case, cut down upon and sawed off the angular part; the patient was cured, but after much suffering. Although a certain quantity of success seems to have attended these operations, the dangers to which they expose the patient are so great, that they should not be performed without the sternest necessity.

Having occupied so much time in the consideration of fractures generally, I shall think no apology necessary for glancing slightly at those which are of minor importance. Fracture of the head and spine will be best discussed when we treat of the diseases and injuries of those organs.

NASAL BONES.

A fracture of the nasal bones results from a direct cause, commonly a fall or a blow; it may be simple, or compound; in the former case the diagnosis is not always easy, in the latter it can rarely be difficult. It is merely necessary to apply a finger and thumb upon the fractured part, and to introduce a finger into the nasal fossa, to be at once informed of the condition of the part. The fracture may extend to the lachrymal duct, may cause injury to the Schneiderian membrane. If it extend to the lachrymal apparatus, the internal side of the base of the orbit and the corresponding part of the eyelid will be ecchymosed.

If simple, and there be no concussion of the brain as a consequence of the injury, there is no deformity. If it be compound, there may be a good deal of displacement, and the fragments must be raised by introducing a sound or the finger into the fossa for the purpose. If there be, after reduction, a tendency to further displacement, it may be necessary to introduce a plug of lint into the affected fossa, to maintain it permanently; in that case a piece of elastic catheter may first be inserted, so that there may be no interruption to respiration. Petit thinks plugging unnecessary, but I have known it very useful.

MALAR BONE.

The malar bone and the zygoma are exposed to external violence, and may be fractured by a blow or a fall. A portion of the zygomatic arch may be fairly detached, but this is not usual; if it be, that portion may be dragged down by the masseter. It is not always easy to make out the kind of injury which has been sustained; if there be a depression at the centre of the arch, or if it be carried down by the masseter, the sight and the touch must detect it; if it be driven in towards the orbit, the irregularity of the circumference of that fossa will be obvious.

The reduction of this fracture cannot be made, if there be simple depression and no wound; if there be a wound, we may be able to introduce a lever by which the bone

may be raised. Delpech, in a case of the kind, recommended that an incision should be made for the purpose of using the elevator. If the bone be pushed towards the orbit, we may act upon it at the base of the orbit, or by the mouth.

SUPERIOR MAXILLA.

A large number of cases of fracture of the superior maxilla, caused by direct violence, are on record; a few cases where the shock has been communicated through other bones, the inferior maxilla, for instance. Whether succeeding to violence, directly or indirectly applied, the mobility of the alveolar process, or the roof of the palate, the crepitation of the fragments, and the acute pain felt, if the patient attempt to crush, between the teeth, any hard substance, usually serve to distinguish it; if there be no cerebral injury, it is not usually a dangerous accident, unless there be great contusion.

Once ascertained, we must endeavour to bring the fragments into apposition; sometimes, if the mobility be great, we may keep the part in contact by twisting wire around the teeth; sometimes, however, much difficulty is experienced in keeping them reduced. The patient must not talk, and he must take nothing but liquid food, until all inflammatory action has subsided, and the parts are consolidated. If there be much inflammatory action or cerebral disturbance, it must be energetically treated by antiphlogistic means.

LOWER JAW.

If the lower jaw were less strong and less moveable than it is, it would be very frequently the seat of fracture. Its superficial situation, its large surface, the place which it occupies, and the projection it forms, exposes it to many chances of injury.

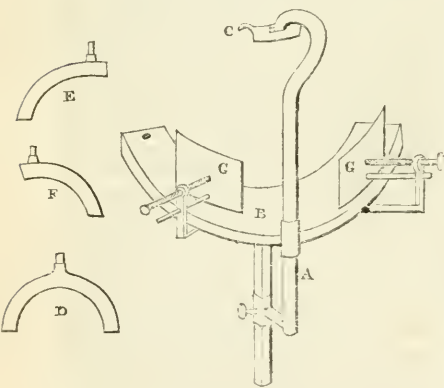
There are several points of this bone where fracture may occur; the body of the bone, at a certain distance from the symphysis, is the point most commonly affected. If it occur between the symphysis and the insertion of the masseter, it is called fracture of the chin; between the masseter and the coronoid process, fracture of the angle. At the symphysis itself, it is almost universally admitted, fracture does not occur; still the opinion is incorrect, but the accident unquestionably is very rare. It is rare to see fracture of the branches: the condyle or the coronoid process is sometimes detached; the angle may also be separated, as well as a portion of the alveolar border. The fracture may be single or double; in the latter case, one is usually situated on either side of the symphysis, so that the centre is fairly detached. It may

be broken into many fragments. The direction may be transverse, vertical, or oblique; horizontal, if the neck, the condyle, or the coronoid process, be affected. If the fracture affect the branches, displacement is infrequent; this is owing to the mode of insertion of the masseter and pterygoid muscles. The fractured extremity of the coronoid process is described as drawn up by the temporal muscle, but this cannot happen unless the tendinous fibres of that muscle, which are inserted about its base, be destroyed. As to the body of the bone there is usually little displacement; if there be any, it is vertical, the portion nearest the symphysis being drawn down by the muscles attached to the chin, whilst the other portion is drawn upwards by the temporal masseter and pterygoid muscles. Almost always these fractures are caused by direct injury. They are easily made out: severe pain at the moment of the accident, increased by mastication, are the principal symptoms where there is no displacement. Soon the mucous membrane over the point assumes a violet colour, which extends to some distance, and is a true ecchymosis. If there be displacement, the line of the teeth will be irregular. Although there be no displacement, there is almost always a mobility, which produces crepitation. If we place the thumb along the dental arch near to the supposed fracture, and move the other portion, the displacement is obvious; but this must be cautiously done. At first the quantity of saliva excreted is a great inconvenience, because the mouth is continually filling.

Treatment.—Unless there be much comminution, or the injury be complicated by other lesion, fracture of the lower jaw is not a dangerous accident; and the apprehensions formerly entertained, of injury to the vessels and nerves of the dental canal, are no longer felt, though paralysis of certain muscles of the face has followed this injury. The reduction is usually easy, and the level of the teeth is a good test of its complete accomplishment. To maintain it in this state, it would be sufficient to bring both jaws together, and fix them; but this cannot be long persisted in, and, therefore, other means are necessary. Moistened card-board, or milled board, may be moulded along the inferior arch of the bone, and there maintained by bandages, until it is dry, when it will be found to form a solid cast, exactly corresponding to the ramus, and capable of retaining the fragments immoveable and in contact. Some persons place soap-plaster to prevent the irritation which the board might otherwise occasion. Hippocrates recommended that the tooth on each side of the puncture should be kept together, by winding gold or silver wire

around them. It is unquestionably a useful suggestion; but, though it would be difficult to urge any decided objection against it, it is not often used in the present day. Although in many cases those simple means sufficed, it was found necessary to invent a parabolic curve, to be applied upon the dental arch. Many modes of accomplishing this object have been invented: the common mechanism being, to take as a point of support the base of the jaw, to place a hollow gutter over more or less of the dental arch, and to connect them externally. The inconveniences of these machines, is the necessity of having a foreign body continually in the mouth, and this many patients will not submit to. Of these apparatuses the following, invented by Mr. Lonsdale, seems to answer better than those of Muys, Bertrandi, Boyer, Ruterick, and Hpuzelot.

The grooved plate C, D, E, or F, is fitted on the teeth; the chin-piece, B, is then passed along the vertical rod A, until it presses firmly against the base of the jaw. The lateral plates G, G, are intended to keep the jaw firmly fixed.



During treatment, liquid food alone should be taken; and speaking, or any thing requiring motion of the jaw, should be avoided.

Usually, by the 36th or 40th day, consolidation has taken place; sometimes by the 20th or 25th day. I have a specimen, in which union took place by means of ligamentous matter, constituting, in fact, a false joint; and yet it did not interfere much with mastication. Under ordinary circumstances, the patient should very gradually resort to the use of solid food.

THE

ENTOZOA OF THE HUMAN EYE, AND OF OTHER VERTEBRALIA,

CONSIDERED WITH REFERENCE TO THEIR
NATURAL HISTORY, AND IN A NOSOLOGICAL
POINT OF VIEW:

*The Account being taken chiefly from Von
Ammon's Ophthalmological Journal, and
other Medical Publications.*

BY A. FRANZ, M.D.

NUMEROUS cases have been recorded by early medical writers, in which a species of thread-worm has been met with in the eyes of horses and of horned cattle; whilst in the eyes of other vertebralia, worms, either of this or any other species, have been less frequently observed. A few instances of parasitic animals occurring beneath the conjunctiva of the human eye, have been noticed by ancient authors; but the account they have handed down to us, as well of the animals themselves as of the pathological changes occasioned by their presence, is but very imperfect. Soemmerring published, in the *Isis*, 1830, p. 717, the first well-marked case that has been recorded of cysticercus cellulosæ, which he found in the anterior chamber of the human eye; and since the date of this publication, several similar cases have been met with, which have been well and fully described by those medical men under whose care they came. But it is to Dr. Von Nordmann, of Odessa, that we owe the very important discovery of filaria and of monostoma in the human eye.—(Mikrographische Beiträge zur Naturgeschichte der wirbellosen Thiere, Heft II. Berlin, 1832). To Dr. Geschlecht, of Dresden, we are indebted for the interesting account of distoma, of filaria, and of an echinococcus, which he found in the human eye.—(Von Ammon's Journal, Band iii. p. 74 and 405.) The attention of these two gentlemen was not confined exclusively to the human eye; they examined likewise the eyes of a great number of fishes, amphibia, birds, and mammalia, and their researches have been rewarded by the discovery of a great variety of entozoa, which may be arranged, according to Rudolphi's system, in the following order:—

ORDO PRIMUS. NEMATOIDEA.

Genus I. *Filaria*.

1. *Filaria medinensis*.—One inch and a half in length; about the thickness of a thin violin string; rather thicker at one extremity than at the other; ash-coloured; and having at each extremity numerous little spots. Found under the conjunctiva of the human eye, by Bajon, *Mémoires pour servir à l'Histoire de Cayenne et de Guiane Française*, &c. Paris, 1777-78, an extract of which is inserted in *Journal de Med.* vol. xlix. p. 386 (1778); by Mongin, *Journal de Med. de Paris*, 1770, t. xxxii. p. 338; by Larrey, *Mémoires de Chirurgie Militaire*, vol. i. p. 51; and by Gaertner, *Schoen's Handbuch der Pathol. Anat. des Menschlichen Auges*, p. 226.

2. *Filaria lacrymalis*.—Very thin, and diminishing in size towards each extremity; the mouth is narrow. The male is 5 to 6 lines in length; from its posterior extremity projects the penis, situated a little anterior to which is the anus. The female is 7 or 8 lines in length, having the anus at the posterior extremity, and the organs of generation at the anterior part of the body. In the excretory ducts of the lachrymal gland of horses and horned cattle, and occasionally between the eyelids and the globe.—Rhodes, *Journal de Physique*, Mars 1810, p. 214; *Dictionnaire des Sciences Naturelles*, t. liii. p. 440. Gurlt, *Lehrbuch der Pathol. Anat. der Haus-und Säugethiere*, Berlin 1831, p. 347.

Filaria abbreviata.—The female is 8 lines in length, whilst the male is only from 6 to 7 lines. The body is very thick in proportion to its length, becoming gradually pointed towards its extremities, the posterior of which is spiral in the male, and in the female straight. The head is thin and obtuse; the mouth circular, the penis filiform, oviduct very wide. Found by Bremser in the neighbourhood of the eye of the *Motacilla staphylina*, and under the *membrana nictitans* of the *Falco naevius*, and described by Rudolphi, *Entozoorum Synopsis*, Berol. 1819, p. 210 and p. 337.

4. *Filaria oculi humani*.—Varying in length, from $\frac{3}{4}$ of a line to $5\frac{1}{2}$ lines; very thin and delicate, perfectly filiform, and generally met with in a convoluted state. The head is pointed, the posterior extremity of the body rather obtuse, and

armed with a short, thin, and curved spine; the anus somewhat thickened around its margin. In the human crystalline lens.—Von Nordmann, *opus cit.* Gescheidt, *loco cit.*

5. *Filaria bonasiae*.—Length from 5 to 6 lines; of a white colour, and, when taken alive from the eye, its movements observed to be serpentine. Found in the vitreous body of the woodcock, by Von Nordmann, *o. c.*

6. *Filaria crassiuscula*.—Four and a half lines long, and one-sixth of a line thick throughout nearly its whole extent. The head is round, and presents two small round papillæ, one at each side; the mouth is elliptical. The posterior extremity is of a conical form, and a little before it is situated the anus, which is somewhat thickened around the margin. Found alive in the aqueous humour of the anterior chamber of *Gadus aeglefinus*, by Von Nordmann, *o. c.*

7. *Filaria armata*.—Colour white; length, $3\frac{1}{2}$ lines; diameter about one-sixth of a line in its whole extent, with the exception of the posterior extremity, which is a little broader, of a very obtuse and rather flat form, and from which a short obtuse spine projects. The head is round, and furnished with four papillæ, each of which presents in its centre a small impression. The mouth is small and circular. Met with in the vitreous body of the *Falco lagopus*, by Gescheidt, *l. c.*

8. *Filaria oculi canini*.—Colour white; length 4 lines; rather thick in proportion to its length; of uniform diameter nearly throughout, decreasing a little towards the posterior extremity only, which is of a conical form. The mouth is circular, and furnished with three small round papillæ. In the vitreous body of the dog. Gescheidt, *l. c.*

9. *Filaria papillosa*.—Colour whitish; from one to three inches in length; of the diameter of a common sewing-thread, decreasing towards the posterior extremity, which is slightly curved. The body is elastic. The head rather large, rounded, and having a group of little spots. The mouth circular. In the anterior chamber, and between the membranes of the eye of horses and horned cattle.—Hopkinson, *Transactions of the American Philos. Society*, 1786, vol. ii. p. 183; Morgan, *ib.* p. 383; Michaelis, *Med. Pract. Bibliothek*, vol. i. 1785, Anhang, p. 243; Will, *Tenffel's Magazin für Thierheilkunde*, vol. i.

Karlsruhe, 1813, p. 287; Sick, *Jahrbücher k. k. Oester. Staaten*. vol. ii. Wien, 1813, p. 174; Greve, *Erfahrungen und Beobachtungen ueber die Krankheiten der Hausthiere*, vol. i. Oldenburg, 1818, p. 173; Anderson, *Edinb. Med. and Surg. Journal*, 1805, vol. ii. p. 306; Deguillême, *Gohier Mémoires*, tom. ii. p. 435; Kennedy, *Trans. of the Royal Soc. of Edinb.* vol. ix. p. 167; Boudgourd, *Bulletin des Sciences Med.* tom. vii. p. 120; Twining, *Veterinarian for 1828*, vol. i. p. 114; Percival, *ib.* p. 74; Chaignaud, *ib.* p. 77; Desmarest, *ib.* p. 79; Gibb, *ib.* p. 194; Molyneux, *ib.* p. 309; Leuckart, *Versuch einer naturgemaessen Eintheilung der Helminthen*, 1827, p. 29; Gurli, *Lehrbuch der Pathologischen Anatomie der Hausaeugethiere*, vol. i. 1831, p. 341; Skeavington, *Veterinarian for 1824*, vol. vii. p. 196.

Genus II. *Oxyuris*.

1. *Oxyuris velocissima*.—Length one-tenth of a line, thickness in proportion to its length, as 1 to 40. The body diminishes in size towards the posterior extremity, and terminates in a long and very fine spine, at some distance before which is situated the anus. The head is obtuse, and entirely unarmed; the mouth circular. Movements of the animal exceedingly quick. In the aqueous and vitreous humour of the eye of the perch. Von Nordmann, *o. c.*, and Gescheidt, *l. c.*

Genus III. *Ascaris*.

1. *Ascaris oculi ranæ*.—One-fourth of a line in length. At the anterior extremity, the animal is large in proportion to its length, and diminishes in size towards the posterior. The head is slender, and rather pointed. Movements very quick. The colour light. In the vitreous body of the common frog. Von Nordmann, *o. c.*

ORDO SECUNDUS. TREMATODA.

Genus I. *Monostoma*.

1. *Monostoma lentis*.—Length of the animal one-tenth of a line; its movements rather slow. In the lens of the human eye.—Von Nordmann, *o. c.*

Genus II. *Distoma*.

1. *Distoma lucipetum*.—The animal is flat, from 2 to $3\frac{1}{2}$ lines in length, and about half a line in breadth; of a white

colour, but assumes a somewhat reddish tint in the vicinity of the suckers, which are situated at the abdomen. The posterior sucker is twice the size of the anterior. The portion of the body between the suckers is the smallest; the greatest breadth is at the suckers; it decreases, however, in size towards its posterior extremity. Beneath the membrana nictitans of *Larus glaucus* and *fuscus*.—Bremser and Rudolphi, *o. c.* p. 367.

2. *Distoma annuligerum*.—This animal is enveloped in an oval cyst, which is one-quarter of a line in length, of a white or yellowish colour, but perfectly opaque. The figure of the worm is either spindle-shaped, circular, or cruciform, apparently dependent on the contraction and expansion of its different parts. The mouth and the sucker, situated in the centre of the body, are equal in size. The intestinal canal is bifurcated. Six or seven animals of this species are generally present at the same time. In the vitreous body of *Perca fluviatilis*.—Von Nordmann, *o. c.* Gescheidt, *l. c.*

3. *Distoma oculi humani*.—This animal also is enveloped in a white and delicate cyst; its length is from one-quarter to one-half of a line; its shape varies, like the former, in contraction and expansion. In the latter state, it assumes the form of a lancet, its breadth being in proportion to its length as one to three. The anterior sucker presents a simular appearance, and is the smallest. The intestine is bifurcated. Gescheidt found four of these animals in the crystalline lens of one individual. *l. c.*

Genus III. *Diplostomum*.

This genus is found in the vitreous and aqueous humour, in the Morgagnian fluid, and in the substance of the lens, in the eye of the perch, carp, and other fishes, by Von Nordmann, *o. c.*, and Gescheidt, *l. c.* A very large number (from 50 to 300) of these parasites are generally met with in the same eye: they move slowly, but in various ways; the body is of a whitish colour, and transparent. They are exceedingly minute, about one-sixth of a line in length, and a great many different species are discernible (Von Nordmann, 58), which may be well arranged according to their characteristics, under the two following heads:—*Diplostomum volvens*, and *Diplostomum clavatum*.

1. *Diplostomum volvens*.—The body

flat, more or less oval, and furnished at its anterior margin with two auricular processes, which are capable of being retracted; the mouth rather wide, and circular. The abdomen presents two suckers, the posterior of which is always the largest. The posterior extremity of the body is somewhat thickened at its terminal margin, is more or less curved downwards, and has on its superior surface a kind of pouch. The intestine is bifurcated.

2. *Diplostomum clavatum*.—The body is rounded, and of a conical form, the anterior portion being of the largest diameter, and obtuse; the terminal margin of its posterior extremity is not thickened. A number of fine incisions are seen around the whole body. In all other particulars it resembles the former species.

Genus IV. *Holostomum*.

1. *Holostomum cuticola*.—This animal is of a milk-white colour, is enveloped in a white cyst, and lies generally in a curved form. It is half a line in length; the body consists of two portions, each of which is of an oval form, rather thick, convex on the dorsal, and concave on the abdominal surface. The posterior portion is about one-third smaller than the anterior, which presents near the centre of the abdomen a rudiment of a sucker. The mouth is merely a small slit, and is retractile. The intestine is bifurcated. In the conjunctiva, cornea, and iris of the carp.—Von Nordmann, *o. c.*, and Gescheidt, *l. c.*

2. *Holostomum brevicaudatum*.—This species is one-third of a line in length, and very much resembles the former, except that its anterior portion is cordiform, and the posterior two-thirds smaller and three-fourths shorter than the anterior, and somewhat flattened. In the vitreous body of the perch.—Von Nordmann, *o. c.*

ORDO TERTIUS. CYSTICA.

Genus I. *Cysticercus*.

1. *Cysticercus cellulosæ*.—This hydatid attains, occasionally, the size of a small pea, but is not usually so large. The body consists of a globular vesicle, which sometimes changes its form, and becomes oval or oblong. The neck is slender, the head slightly enlarged, and presents a double circle of hooks, around which are situated four prominent suckers. This animal possesses the power of extending its head and neck beyond

the vesicle, and of retracting them again within it. Found in the anterior chamber of the human eye by Soemmering, *l. c.* A similar case has been met with by Logan, which he published in a pamphlet: "Case of Animalcule in the Eye of a Child, 1833." This case was examined also by Mackenzie, LONDON MEDICAL GAZETTE, vol. xii., p. 110. Another case of this kind has been met with by Neumann, Rust's Magazine, vol. xxxiii. p. 59. Estlin found the same animal twice beneath the conjunctiva of the human eye.—LONDON MED. GAZ., August 25, 1838, vol. xxii. p. 830; *ibid.* March 27, 1840, p. 35. It has been met with in the same situation by Hoering, Med. Correspondenz. Blatt, vol. ix., No. 25, p. 196; and also by Baum, Berliner Medical Zeitung, 1832, No. 16. Mackenzie found six or eight worms of this species in the cellular substance of the upper eyelid in the human subject.—Treatise on the Diseases of the Eye. Third edit. p. 909. The same animal has been met with in the pig, under the eyelids, by Greve—Krankheiten der Hausthiere, Oldenb. 1821. vol. ii. p. 79; in the chambers of the eye, in the vitreous body, and in the neighbourhood of the eyeball, by Von Nordmann, *o. c.*; in the anterior chamber, and between the choroid and retina, by Gescheidt, *l. c.*

Genus II. *Echinococcus*.

1. *Echinococcus hominis*.—This hydatid consists of a pretty large vesicle, composed of a firm white membrane, containing another vesicle within it, which is somewhat smaller, of a blueish-white colour, and of a very delicate texture; the space between the two vesicles being filled by an aqueous fluid. The inner vesicle, which is likewise filled by a serous fluid, incloses a great number of very minute worms, of a round or oval form, either floating in the fluid, or adherent to the inner surface of the vesicle. In several of these animals the suckers were plainly observed, when placed under the microscope, but the circle of hooks could not be distinguished. Found between the retina and choroid of the human eye, by Gescheidt, *l. c.*

Hydatids, of various forms and sizes, have been met with by different medical men; but the account which they have given of these animals is not sufficient to enable us to determine their species. From what has been stated, however,

respecting them, it is probable they belong to the genus *Echinococcus*. Schmidt (Ueber die Krankheiten der Thraenenorgane, Wien, 1803, p. 73, and in Himly's Ophthalm. Bibliothek, vol. iii. p. 159.) gives an account of a large hydatid which he discovered in the lachrymal gland. Beer (Lehre von den Augenkrankheiten, Wien, vol. ii. p. 589, note) mentions an instance in which he found a large cyst in the neighbourhood of the lachrymal gland. Lawrence met with a case of cyst in the orbit, containing hydatids (Medico-Chirurgical Trans. of London, 1832, vol. xvii. p. 58). Delpsch found a large hydatid in the orbit behind the lachrymal gland (Chirurgie Clinique, vol. i. p. 99). Rossi (Memorie della reale Accademia delle Scienze di Torino, 1830, t. xxxiv. p. 636.) states that he has met with small hydatids in the choroid and retina.

Having thus given a brief description of the various species of Entozoa found in the eye, so far as they have hitherto been examined, it remains now to offer a few remarks on the causes which produce these parasitic animals, and on the pathological changes observed in the eye when worms are present.

As *remote causes*, climate, and the entire habit or manner of living, may be regarded as the two principal. In India, for instance, horses which are kept in narrow vallies or damp countries, and according to Skeavington's statement, those which have foul or marshy water, and bad or wet grass, for their food and drink, are subject to worms; whilst in Europe, under similar circumstances, the occurrence is very rare. Fishes, as is observed by Von Nordmann and Gescheidt, living in mountain streams with a sandy or gravelly bottom, are rarely, if ever, subject to worms in the eye; whilst in the eye of those that inhabit ponds or rivers with a marshy or clayey bottom, these parasites are almost always generated, which is especially observed in the eyes of old fishes.

As the *proximate cause* of the production of worms in the eye, must be assumed an abnormal state of nutrition in that organ, dependent on some morbid action, such as diminished absorption, excessive secretion, stagnation, &c.; and a certain alteration in the quality of the lymph or mucus, &c., which, in a healthy state, and under a regular action, would appropriately serve the ends of nutrition and reproduction, but being

thus prevented from doing so, gives rise to parasitic creations in the eye. These parasites, when once produced, are not only capable of keeping up that morbid state by which they are generated, but also of producing pathological alterations in the different parts of which the eye is composed. These pathological alterations, occasioned by the presence of worms as foreign bodies in the eye, which, previously to the formation of the parasites, was already diseased, present themselves under different forms, dependent partly on the susceptibility of injury possessed by the animal in whose eye they may happen to be lodged, and partly on the seat of the worm itself, and on its particular species.

In the lachrymal gland, and in the neighbourhood of the eye-ball, within the orbit, cysticercus and hydatids have been met with. In general, the complaint came on slowly, and was attended with inflammation, severe pain, swelling of the lids, and tumors, by which the eye-ball was protruded from the socket. In some cases the structure of the globe was not injured; but the iris became motionless, vision was lost, and the general health much impaired. In those instances which admitted a timely removal of the parasites from the tumor, by an opening made into its most prominent part, the cyst, where they had been lodged, having been well cleared out, was obliterated by subsequent inflammation and suppuration; the eye was retracted to its proper place, the sight returned, and all other symptoms entirely disappeared. But in those cases where this could not be accomplished, the structure of the globe being already injured, and the complaint altogether too far advanced, the eye and lachrymal gland were extirpated, in order to save the life of the patient. The small cysticercus met with in the neighbourhood of the eye-ball, within the orbit, in the pig, has been found to occasion chronic inflammation, from the pressure of the worms upon the parts surrounding them, which was followed by its usual sequelæ. One pig, beneath the eye-lids of which cysticerci were found, was incapable of closing the lids, and at last could not move them at all. The filariæ found in the excretory ducts of the lachrymal gland of horses and horned cattle, as also under the membrana nictitans of birds, produced by their quick movements inflammation and profuse secretion of tears.

Under the conjunctiva, covering the globe, filaria and cysticercus have been met with in the human eye; the latter also in the pig. The former occasioned the most vehement pain, although scarcely any sign of inflammation was present. In one case, the worm disappeared from beneath the conjunctiva, and exhibited itself again under the external covering of the upper lid, resembling a small subcutaneous vein, moving in all directions. An opening was made, and the worm extracted. The cysticercus occasioned a small tumor of the conjunctiva, which was a little reddened; but no actual pain, merely a slight pressure was felt. The tumor was opened, and the worm taken out. The conjunctiva covering the tumor was a little thickened; but the small puncture made for the removal of the worm soon closed, and no trace of it remained. The portion of the conjunctiva, where a cysticercus had been lodged in the eye of a pig, presented increased thickness and vascularity, and the cornea a slight opacity.

In the substance of the proper membranes of the eye-ball, worms are rarely seen. The holostomum has been met with in the cornea and iris of fishes only. The situation of the animal was marked by round dark spots, apparently consisting of altered cellular tissue, with dark pigment enclosing the cyst, in which the worm generally lies in a convoluted state. No signs of inflammation or vascularity were present. In one case, however, the cornea was partly destroyed, by the presence of three animals of this species.

In the anterior chamber of the eye, in man and in the pig, cysticercus has been found; filaria in that of horses and horned cattle; and diplostomum and holostomum in that of fishes. The formation of the cysticercus in the human eye was preceded by repeated attacks of inflammation; but, during the existence of the animal in that organ, neither inflammation nor pain was present. In one instance, however, inflammatory symptoms exhibited themselves some time after the worm had been generated; but, on the removal of the animal, by an incision in the cornea, the eye regained its healthy condition. In another case, which occurred in a boy, 14 years of age, of very scrofulous habit, the worm slipped into the pupil, and, whilst remaining in this situation, caused very severe pain. A strong infusion of belladonna was applied

to expand the pupil, so as to release the animal; but this proving of no avail, the animal, which in this instance was mistaken for the lens, was removed from the pupil by couching it with a needle passed through the cornea; but, on the third day after this operation, a severe ophthalmia came on, and the eye suppurated. In the pig, in which the same worm was found, a portion of the cornea was rendered opaque, and the ligamentum ciliare reddened and thickened. Filaria, when found in the eye of horses, always occasions acute inflammation, which spreads from the conjunctiva over the sclerotica and cornea, proceeding frequently to a fearful extent, and is often followed by suppuration, and rupture of the eye-ball; but if the worm die, or is extracted before the inflammation has made much progress, the eye may resume its healthy condition. In the eyes of cattle, the same results are observed, but the disease does not proceed so rapidly. The severity of the disease, caused by filaria, seems most probably to depend upon the quickness of the animal's movements, and on its sometimes making its way out of the anterior chamber into the cellular tissue, interposed between the different membranes of the eye; and the more rapid progress of the disease in horses than in cattle, appears to be dependent on the former being more susceptible of inflammation than the latter. The diplostomum and holostomum, found in the anterior chamber of the eye in fishes, produce scarcely any marked signs of disturbance or pathological alteration; the aqueous humour is sometimes merely rendered slightly turbid.

The appearance of those crystalline lenses and capsules, in which parasitics have been found, leaves no doubt that the natural function of these parts has been disturbed long before the formation of the worms, whilst the worms, after their production, have kept up and increased that morbid action by which they were generated. The lens and capsule of the human eye, between which distomata were found, presented only a slight opacity, which was, however, greatly increased in the immediate vicinity of the worms; in this part the lens and capsule were both altered in texture also. Other human lenses and capsules, which were affected with filariae, presented nearly the same appearance; but the lens itself was very soft, and its fibres seemed more strongly developed, and their proper and

regular arrangement considerably disturbed. The lens and capsule of the eye of fishes, which is so often the seat of trematoda, were found less opaque; but the Morgagnian fluid, where they are generally met with, was always more turbid. In those cases where the lenticular capsule was affected, its posterior part only was observed to be opaque.

In the vitreous body, the cysticercus has been found in the eye of the pig; diplostomum and holostomum in that of fishes; and filaria in that of the dog, the horse, and the Falco lagopus. The filaria appears not to have been generated in the vitreous body, but to have made its way out of the anterior chamber into it, and in this situation has occasioned great injury to the eye. In the other cases, where the above-mentioned parasites have been found in the vitreous body, it was more or less turbid, or quite opaque, and in the immediate vicinity of the worms appeared almost white, resembling effused lymph. In one case coagulated blood was found in the vitreous body. The hyaloid membrane, especially in the neighbourhood of the worm, was thickened, very soft, and sometimes changed into a brownish mass.

Injuries caused by worms lodged between the retina and choroid, or between this membrane and the sclerotic, are of the utmost interest, and vary according to the different species of worms. Nematodea and trematoda, by the rapidity of their movements, occasion severe acute inflammation; while the cystica, growing slowly, and being more confined in their movements, cause nearly the same alterations as are produced by an accumulation of fluid between these membranes. In the human eye, where an echinococcus was found between the retina and choroid, the vitreous humour had almost entirely disappeared, and the retina, which was rather thickened, was so intimately united with the remainder of the vitreous body, that it formed but one membranous mass of a bluish and reddish colour, running in a somewhat cylindrical form, from the entrance of the nerve at the posterior hemisphere of the globe, in the direction of the axis of the eye, towards the anterior hemisphere, where it united with the lens and cornea ciliaris. The space thus left between this cylindrical and membranous body and the choroid, which remained in its proper situation, was filled up by the echinococcus. The choroid was thinner

than usual, of a varicose vascularity, and deprived of its colouring pigment. The small cysticerci found between the choroid and retina, and between the latter membrane and the hyaloid, in the human eye, occasioned more or less functional derangement; the organic alterations were observed to be but slight in these cases. The cysticerci met with between the retina and choroid in the pig, were surrounded by a lymphatic exudation, on the surface of which, as well as in the retina, a fine vascularity was observed. In one case, where six cysticerci, together with some coagulated blood, were found at the same time in the vitreous body, an ossification of pretty large extent, and three and a half lines in thickness, was discovered at the inner surface of the sclerotic, surrounding the optic nerve at its entrance. This ossification proved to be hollow, and the abode of six other worms of this species. The whole posterior hemisphere of the sclerotic was observed to be much thicker than usual; the choroid and retina were not altered. In the eye of fishes, where diplostomum and holostomum are sometimes lodged between these membranes, an alteration of texture is usually seen surrounding the worm, and resembling effused lymph, tinged with the pigment of the eye.

In concluding this brief account of the entozoa discovered in the eye, it may be not uninteresting to remark, that the same species of worm found in the eyes of horses and cattle, have, at the same time, been met with in the thorax, abdominal viscera, scrotum, spinal cord, cellular substance, nay, even in the mesenteric veins, and celiac artery, of the same animal. In the pig, where cysticerci were found in the eye, worms were, on examination, discovered also in other parts of the animal, and especially in the brain.

Golden Square, April 23, 1840.

CURE OF SQUINTING.

To the Editor of the Medical Gazette.

SIR,

By desire of my friend, Dr. Franz, I beg to forward you the further report of the two cases of strabismus, operated upon by him, the account of which appeared in your journal on 17th April last, as also

of another case, operated upon since.—I remain, sir,

Your obedient servant,

F. STEINHAUSEN, M.R.C.S.

Upper Terrace, Islington,
May 13, 1840.

A few days after the operation, the conjunctiva presented an increased vascularity at the inner angle of the eye, and slight thickening in its texture near the edges of the wound. The motions of the eye-ball were free in all directions; they caused, however, a slight degree of pain in the situation of the divided muscle, subsiding when the organ was at rest. No sign of inversion could be detected in the eye operated upon. Both in moving the eyes, and in fixing them upon an object, the optic axes corresponded with each other. During the first week after the operation, the patients were permitted to make only a limited use of the eye; but during the second week they began to follow their ordinary occupations. A few days ago, when I again saw these patients, there still remained a slight redness of the conjunctiva at the inner angle of the eye, but the wound had perfectly healed. Both the eyes moved freely and harmoniously, the pupil occupying a proper position. The general health of the patients was good; and, with the exception of aperient draughts, no medicines were required.

Since then, Dr. Franz again operated, in my presence, on another case, of which the following is the account:—

Thomas William Gest, aged 11 years, a boy of strumous habit, with large dark eyes. According to the mother's account, the squinting had first made its appearance in his fifth year, after a severe attack of inflammation which he suffered, in his left eye. On examination, the right eye was found to be perfectly straight, but the left eye to be turned a little upwards, and considerably inwards, so that one-fourth of the cornea was hidden by the inner canthus. On closing the sound eye, he could, with some exertion, move the affected eye outwards a little beyond the orbital axis, but it soon returned to its usual inverted position. He could only read large print. The vessels of the conjunctiva were dilated, resulting from the prior inflammation. He desired the operation, in order to be able to learn the business of a compositor. The operation was performed on the 6th, in the same manner as on the

former patients. The instruments employed were, two wire retractors for fixing the lids; a small scalpel; the curved scissors, for the division of the muscle; and, for fixing the eye-ball, a hook, with the improvement of a sliding-guard, to cover its sharp point, when passed through the conjunctiva. The muscle in this case was remarkably developed, and very broadly attached to the sclerótica. The hæmorrhage, although more considerable than in the former cases, was not of sufficient extent to interfere with the progress of the operation. On removing the hook from the conjunctiva after the division of the muscle, the eye was directed a little outwards, and its motions were free, except internally. Cold water dressings, and an opening draught, were ordered.

On the 7th, the conjunctiva presented an increased vascularity, and the boy complained of a slight pain in moving the organ. The pupil now occupied a proper position. The motions of the eye were free, and both organs acted in unison.

On the 12th, the wound had nearly healed. A slight redness yet remained at the inner angle of the eye, which was now free from pain. The health of the patient continued undisturbed, and no trace of squinting could be detected.

The final result of these, as also of some other cases, Dr. Franz will report in a future number of the *MEDICAL GAZETTE*.

BITE OF A VIPER.

To the Editor of the Medical Gazette.

SIR,

IF you should consider the accompanying case, with one or two observations, as worthy of a place in the columns of the *MEDICAL GAZETTE*, I shall feel obliged by its early insertion.

I am, sir,

Your obedient servant,

HARVEY K. OWEN, M.R.C.S.

Maidstone, April 26th, 1840.

John Burr, æt. 20, of moderate muscular make, when first seen was suffering from a state of collapse, and gave the following history of himself:—That he was a labouring man of good health and steady habits, neither having suffered of late from any illness, or inclined to be

easily frightened; that half an hour previously, while on the road to Maidstone, and gathering some broom, he noticed something moving in the under-wood, which proved to be a viper. On endeavouring to catch it, it became enraged, and flew at his hand. He immediately felt a prick, as of a needle, and, on looking at the part, found that one or two drops of blood had issued from some punctures at the back part of the right index finger. The reptile, on giving the wound, fell off directly, but attempted a second time to reach the hand, in which attempt the man thinks it failed. This feeling of a prick was immediately followed by intense pain in the wounded part, in a short time extending along the forearm to the middle of elbow, and thence to axilla. He describes this pain as being of a burning character, and almost directly followed by great swelling of the hand and wrist: as the pain extended, its severity, in the wounded part itself, somewhat diminished. Simultaneously with its reaching axilla, a pain or feeling of constriction was experienced about the head, throat, and right side of tongue, accompanied also with a sense of heat about these parts. He also complained of having had great difficulty in attempting deglutition. To these symptoms were added nausea (no actual vomiting), dyspnœa, faintness, and a sudden attack of severe pain at *scrob. cordis*, with considerable thirst. It appears that, after being bitten, he was able to catch the reptile, which having destroyed, he took a portion of the fat and applied to the wound on the finger, but, as may be supposed, without experiencing relief. He then hastened on towards Maidstone, and, on presenting himself, his condition was as follows—half an hour, as far as he could guess, having scarcely elapsed since the reception of the injury:—

Countenance pallid, extremely anxious, and covered with drops of perspiration; hands, feet, as well as body, pretty natural as to temperature; pulse small, nearly 100, no irregularity. On looking at the seat of the wound, merely two black specks are to be seen; there is, however, great swelling and tension of the part, having an œdematous appearance, which extends to a considerable distance beyond wrist: great pain, although less severe than at first, extends from the punctures along the anterior part of forearm to axilla. But very

moderate pressure can be borne along this track; pressure over the four or five ribs of the right side also causes pain; an extreme degree of pain at epigastrium, the least pressure there causing him great suffering; no swelling of the right side of face; the tongue, however, has a swollen appearance; it can be protruded but slowly, and in a small degree, and is evidently directed to the side affected. The voice hesitating and thick, and somewhat resembling that of a man suffering from slight intoxication, but, otherwise, he is certainly quite collected and rational: there is also a troublesome thirst and craving for cold drinks, nausea, and slight attempts at vomiting, which appear to aggravate the suffering. A ligature was placed pretty tightly about the wrist; free incisions were also made about the wound, which the patient was desired to suck; very little blood, however, escaped. An emetic of mustard was also given; just previously to taking which, a small quantity of half digested food was brought up from the stomach. The mustard draught was kept down for about half an hour, at which time it operated pretty violently, when the pulse rose in power, his voice became more clear, and altogether he felt improved. A slight return of collapse took place a few minutes afterwards; but, on the administration of the *ip. ammon. co.*, he gradually improved, and was enabled, with assistance, to walk as far as the West Kent Infirmary, and was placed under the care of Mr. Wedd, the senior surgeon of the Institution. On reaching it, at first he felt himself much improved; but, being somewhat exhausted, he was obliged to lie down for some little time, and he had, at this period, two convulsive twitches of the right side. Having been placed in bed, an elliptical portion, including the marks of the bite, was excised from the finger, which was followed up by the application of a large poultice to the hand. To relieve the distressing sensations at stomach, a sinapism was applied, and ammonia directed to be given as required. On leaving him, after about half an hour, his appearance was improved; he had less anxiety, the other symptoms were mitigated, and he had passed about half a pint of clear light-coloured urine. It was found, when the hand was examined about two hours after, that a good deal of blood had

escaped from the incision, and a strip or two of plaister was placed around the finger to exert slight pressure on the artery.

Quarter to 10, P.M. — Improved ; face calm ; pain diminished, but a great deal of soreness ; the epigastric pain was much diminished by the action of the sinapism ; the hand and arm are more swollen ; pulse 90, full, and rather jerking, diminished by moderate pressure ; tongue is protruded easily, and is directed straight forward.

19th April, 10 A.M. — Has passed a pretty good night ; soreness remains along the course of the former pain ; countenance calm ; tongue a little white and dry ; skin rather hot ; pulse 90, as yesterday ; slight thirst. The parts about the wound are more swollen than yesterday, and very tense, extending above the elbow. Ligature was removed, and, bowels not having been relieved since admission, the following powder was given :—

R Hydr. chlor. gr. vj. ; pulv. jalap co. gr. xvj. statim ; mist. salin. ʒiiss. 4tis horis.

9 P.M. — The powder has operated three times pretty briskly, and the man appears much improved ; can bear epigastric pressure without causing pain, as also in axilla ; this last region, up to to-day, was very tender ; tongue a little white ; pulse as before.

20th. — Has not passed a very good night, having had occasional pain about hand and arm ; this has not occurred lately ; very slight general indisposition remains ; arm to-day much less swollen, and wound looks pretty healthy.

Rep. medic. &c.

21st. — Altogether improved ; bowels twice open this morning ; arm diminishing in size ; slight œdematous swelling of hand remaining ; a slight discharge of thin serous matter from wound.

23d. — Continuing to improve, he left the infirmary this morning ; all general uneasiness left him ; the wound still produces a thin serous discharge ; nor is there any attempt at granulation. Since the above date a slight slough has separated, and, at times, there has been slight pain ; but to-day, the 26th, the sore is covered with healthy discharge, and presents a good granulating surface, requiring merely the approximation of its sides by adhesive plaister for its cure.

The accompanying case, although probably by no means rare, affords a good example of the constitutional derangement following the bite of our common viper ; perhaps the only one of British reptiles whose wound is looked forward to with any degree of apprehension : for although we hear of deleterious effects following the stings of wasps and one or two other insects, yet for such result it would appear that either a peculiar delicacy of constitution, or some other peculiarity in the circumstances, is necessary : and again, the effects of these injuries are very different from the one now considered ; for while symptoms of the former take some time to develop themselves, those of the latter are almost instantaneous. The former are regarded with uneasiness as producing a state of excitement or inflammatory action, while the bite of the reptile is directly opposed to the above, appearing to act from the first as a direct sedative, increase of action merely following at a distant period. It has been supposed (an opinion supported by Fontana,) that the immediate effects are chiefly the result of fear in the injured individual ; and, to strengthen this opinion, he states that he has known a person bit without perceiving it, but who, after seeing the blood, and observing a viper near him, suddenly fainted away. In the above case, the wound occurred in a man neither lowered by ill health, or belonging to what is termed, in vulgar parlance, a *nervous* temperament, but whose health had been uninterrupted ; and, at the same time, we may suppose that, being some distance from any place where relief could be obtained, there must have been considerable effort made, on his part, to withstand the approaches of the attack.

As regards the history of the case itself, there is probably nothing novel in it—an acute pain in the wounded part, extending up the arm, (and *en passant* it may be observed that the course of the median nerve was pointed to as its seat). On reaching axilla, this was followed by a sympathy of the whole nervous system, as instanced in the faintness and general malaise, but more especially of the respiratory nerves, the deglutition, respiration, and cardiac action, being almost simultaneously affected, producing a degree of collapse which, at first sight, was somewhat alarming ; for although in these cases a fatal result is

rarely met with, yet such are on record. Fontana mentions one; and Mr. Phillips, in a late number of the *MEDICAL GAZETTE*, relates another. The same surgeon also quotes a case from the *Annales du Cercle Medicaire*, of a woman who, sitting down upon a viper, was wounded in the thigh, and, an hour having elapsed before assistance could be obtained, death followed in thirty-six hours; notwithstanding the internal use of ammonia and the other means were had recourse to. Then again there must be a great increase of danger if occurring in a man suffering from previous disease, more especially of the lungs or heart. In most of the cases on record, and one especially marked in the present, was an extremely distressing pain at the epigastric region—a pain which we probably may regard as of a perfectly neuralgic character, (a term, as a distinguishing mark, objectionable, as we cannot understand pain independent of the nerves,) its sudden approach and equally sudden subsidence being opposed to the idea of its being at all inflammatory; indeed, I think it by no means determined where it is even situated, whether about the stomach itself, being the result of a peculiar action on pneumogastrie, or whether it is more superficially, from the very slight degree of pressure which causes the distress and shrinking of the patient. I am rather inclined to the latter opinion.

As to the treatment, the first application was the fat of the viper itself; for the patient, having killed it, took a little of the fat and rubbed his finger with it: this savours somewhat of the *similia similibus* remedies; it is one, however, in great repute among the uneducated rustics. In regard to the ligature above the wounded part, which has the high authority of Sir Everard Home and Fontana in its favour, it would be a point of great interest to know at what time it ceases to be useful; whether we are to regard the progress of the poison simultaneous with the pain and swelling, or to regard its absorption as being more gradual and protracted; for while, in the first case, a ligature, unless applied immediately, would prove of little or doubtful utility, in the last, which is most probably the case, its application, even after some short time had elapsed, might prove of the greatest importance, and, as a doubt does exist on the subject, it is worthy of a trial in

most cases, being easily applied, devoid of injurious effects, and tending to raise the confidence of the patient. As to the free excision of the part, as prescribed by Mr. Wedd, this, if performed pretty early, cannot fail to be of service, tending to remove altogether the source of the poisoned stream, and thereby a further impregnation. The application of cupping glasses was not, for a very obvious reason, resorted to in this case; for although no doubt can exist, from the experiments of Sir David Barry, of their great utility, yet it must be owned, their application, if not altogether impossible, would be very awkward over one of the digital phalanges, a part, perhaps, more exposed than any other to injuries of this nature. An effort was made, on the part of the patient, to supply this deficiency by suction—a very feeble and inefficient means as compared with the action of a cupping glass, rarification of air being much less capable of being obtained, and the same degree of pressure on the surrounding parts being entirely wanting. In regard to the placing of glasses over a part previously scarified, as recommended by some, I would wish to call to remembrance the following statement of Sir David Barry, that on placing a glass, the air of which has been rarified or partially withdrawn, over a wounded surface, the point which opposes the least resistance to the exit of blood, or of the deleterious matter, is the wound itself; that on scarifications being made, such ceases to be the case, and the more numerous the incisions the less likely is it to take place; and if these extend beyond the area of the vacuum, the contents of the vessels thus divided will cease to be influenced by it, and, therefore, whatever portion of poison has passed beyond the point of division will be carried to the heart just as if no vacuum had been formed. The application of caustics, though as useful as collateral measures, would not appear to be worthy of greater confidence, as being on the whole uncertain in their action; the potassa fusa would probably be most beneficial, as being more searching in its action than the nitrate of silver. The state of deficient circulation remaining after the evacuation of the stomach, will suggest the use of ammonia and the like class of remedies. One form of ammonia, the eau de luce, has been greatly recommended by some

who have had an opportunity of seeing cases of bites from the serpents of the tropics; how far it really is superior to the common carbonate or compound spirit of ammonia, and on what this superiority depends, I must leave for those who have watched its action and effects to determine.

REPORT OF CASES.

By H. M. HUGHES, M.D.

Physician to the Surrey Dispensary.

Fever.

THE district to which the charity of the Surrey Dispensary is extended, or rather within which patients may be visited at their own residences, embraces the whole of the space bounded on the North by the Thames, within the line passing from the Vauxhall to the Kennington, Walworth, and Green Man Turnpike Gates, along the Blue Anchor Road to the Mill-pond Bridge. This is divided nearly equally, as to extent, into an eastern and western district, by the road leading from the Walworth Gate to the London Bridge. It is with the western district alone that, during the past year, I have been connected; and it is to that, therefore, alone, that the following observations strictly apply, though I believe that they would be for the most part applicable to the eastern district also. The patients visited by me have, however, in the great majority of instances, resided within the triangular space, bounded by the roads passing from the London and Westminster Bridges to the Elephant and Castle. Their places of abode have usually been in confined courts, alleys, or back streets, in which ventilation is imperfect, cleanliness is generally little regarded, and the *res augustæ domi* is often painfully evident both without and within.

In this institution, as generally in others of a similar kind, those patients alone who are too ill, too weak, or are otherwise unable to attend personally at the Dispensary, are visited by the medical and surgical officers at their own homes. A very large majority, therefore, come to the Dispensary. Among those visited at their own residences by myself during the year, between March 16th, 1839, and 1840, I have longer or shorter notes of 223 cases.

These cases I have arranged in a

tabular form, and propose, after making a few general observations upon the diseases mentioned in the table, as presented to my own notice, briefly to relate any particular case which may appear to me to possess any especial interest. Before doing this, however, I may, perhaps, with propriety make a few general remarks upon the diseases occurring under my observation during the past year.

It has, I believe, been commonly noticed by medical practitioners of the metropolis and its vicinity, that the state of the public health has been unusually good during a great portion of that period; and that epidemic and contagious affections have been both few in number and slight in character. My own observation certainly tends to support the correctness of this opinion. Continued fever has not been nearly so common as usual; and typhus, usually so frequent in dispensary practice, has been a comparatively rare disease. In confirmation of this, I may, I believe, with truth assert, that I have not unfrequently had under my care at one time, and in the same charity, more cases of typhus than have occurred to me during the entire year. It is true that previously to the past year I was engaged in the eastern portion of the dispensary district, from which the patients are somewhat more numerous than from the western, and in which typhus may be generally more common than in that with which I am now connected; but neither of these circumstances are sufficient to account for the small proportional number of cases of fever. It has also been, I believe, a common observation at Guy's Hospital, that the wards, for the last twelve months, have been unusually free from fever. For the last thirteen years, during which I have had the advantage of pretty constantly seeing the patients in that institution, I do not recollect so few persons to have been admitted with that complaint in any equal space of time as during the past year. Scarlatina, in the latter part of the summer, and during the autumn months, was very general, at least among the poorer classes; but though I have heard of a few fatal cases on the Surrey side of the Thames, it has usually been of a very mild form; so mild, indeed, that, in many instances, the parents of the children affected have not sought for any medical assistance. Measles and hoop-

ing cough have been less common; and of small-pox I have seen and heard of but very few examples. The complaints most common have been those resulting from the more obvious changes of the atmosphere, as chronic affections of the chest, and rheumatism. In reference to the following table, I may observe that I have introduced in the line "relieved," not only those patients who were dis-

charged relieved, but also all who have gone into hospitals, or to the country, who have left the district, or who, being able, after some amendment, to come to dispensary, have discontinued their attendance, and have omitted to return their letters of recommendation. Several of these I have reason to know were cured; and some, it is probable, have subsequently died.

		Died.	Were cured.	Relieved.	Remained under cure.
Number of cases 223, of whom		42	107	52	22
Fever, intermittent 2 }					
— remittent .. 4 }	19	2	16	...	1
— continued 13 }					
Scarlatina	8	1	7	...	...
Sequelæ of do.	9	...	9	...	...
Renal dropsy	5	2	...	2	1
Rubeola	8	...	8	...	...
Phthisis	30	16	2	12	...
Bronchitis with emphysema 18 }					
— without do. 8 }	26	3	7	12	4
Pneumonia	3	3	...	...	...
Pleuritis	5	...	5	...	...
Rheumatism	19	...	13	6	...
Cynanche	7	...	7	...	...
Lead colic	7	...	7	...	...
Disease of brain ...	9	4	2	2	1
— heart	6	3	...	3	...
Erysipelas of face	3	...	3	...	...
Mesenteric disease and ulceration of } bowels	5	3	...	1	1
Dysentery	4	...	3	...	1
Miscellaneous.....	50	5	18	14	13
223		42	107	52	22

Fever, intermittent.—Two cases of this form of fever are noted in the table as having been of a character sufficiently severe to require visiting at home. Ague is a disease not usually needing the attendance of the physician at the bedside of persons under its influence. The complaint, in both instances, occurred in the person of one individual at different times, and, as on these occasions, it presented some peculiarities, I shall briefly relate the particulars. A lad, of strong constitution, and good health, aged 17, left his parents to practise his calling (a wire worker and tinker,) in the eastern and midland counties, and returned, after an absence of several months, very ill. When first summoned to attend him, April 30th, 1839, I found him labouring under all the symptoms of common continued fever of a severe kind: his face was flushed, and his conjunctiva injected;

there was great heat and pain of the head, a burning skin, great general vascular excitement, and considerable disturbance of the sensorium; the tongue was white, but moist, and the pulse about 112. This state had been preceded by languor, sickness, general pains, and shivering. Six or eight leeches were applied to the temples; the hair was ordered to be cut, and an evaporating lotion to be applied to the head; a dose of castor oil to be taken directly, and a mixture containing soda three or four times a day. After a quiet night, I found him the next morning nearly well, and I began to suspect that he had formerly laboured under the effects of simple cerebral congestion, or that he offered an example of one of those rare cases in which fever seems to be cut short. On the following day, however, after passing a restless night with considerable wandering delirium,

he was as severely affected with fever as before. This state of febrile excitement was neither preceded by any distinct rigor nor followed by diaphoresis; but as I found that, on alternate days, he was comparatively free from complaint, and entirely free from fever, being only affected with slight languor and debility, after I had acted freely on his bowels, I gave him quinine in doses of three grains every six hours. From this time he speedily recovered, and afterwards had but one paroxysm of a much milder character than before. In a week, being apparently well, he discontinued his medicine without my sanction, and resumed his occupation and his peregrinations. He again came under my care for the same affection, in a much less severe form, June 18th, and was immediately ordered to take quinine. The medicine at once checked the disease; but, on this occasion, he continued it for four or five weeks after the apparent removal of his complaint, and he has from that time remained perfectly well. If this can fairly be considered a case of ague, it certainly presented some peculiarities, as well in the great severity and long duration of the paroxysms, as in their being neither preceded by shivering nor followed by perspiration. On the alternate days, however, he was entirely free from all febrile excitement.

Fever, remittent.—The only four cases of this complaint, requiring visiting at home, occurred in children, and presented nothing remarkable. They, together with almost all the cases of a similar kind, which I have seen, appeared to prove the correctness of the opinion, which places the source of the remittent or irritative fever of children, in disorder of the stomach and bowels, produced by unhealthy secretions or improper food. I have usually found them easily yield to small doses of Hydrarg. c. Creta and Rhubarb at bed time, a little castor oil in the morning, some simple saline medicines during the day, and regulation of the diet.

Fever, continued.—The cases of this form of fever, falling under my care, during the past year, have, as I have already mentioned, been fewer in number than in any equal space of time, since I have been connected with dispensary practice. They have also certainly been less severe in character, than in those seasons in which fever is epi-

demic. This statement may appear inconsistent with the fact of two deaths having occurred in only thirteen cases, of which notice is taken above, as the proportion is certainly larger than under ordinary circumstances. Death, however, in one at least, if not in both, of these cases, appeared to me, and, I think, will probably in the sequel appear to others, to have been connected with other causes than the simple fever.

The respective ages of the parties attacked were 5, 7, 14 (3), 16 (2), 17, 32, 33, 36, 42, and 62. Of these, five belonged to one family, and two to another; the other cases were single and distinct. Of the thirteen, muco-enteritis existed in five; in one of whom it was so severe as to threaten exhaustion and death. In the majority of instances, at some part of the complaint, there was visible on the trunk a measles-like rash, which, as far as I was able to observe, appeared and disappeared at uncertain periods, and presented no regularity in either its extent or its duration. In none of these cases did true petechæ make their appearance on any part of the body; though in one case, that of a lad aged 16, who suffered from a very violent attack of the complaint, there appeared, on the fourth day, some large spots of a damask rose hue, resembling the roseala autumnalis of Willan. They were confined to the upper extremities, disappeared on the sixth day, and were replaced on the eighth by the more common rash of fever, which, though most thick upon the arms, was also visible on the trunk and lower extremities. It has been supposed that this rash is almost exclusively seen in those cases of fever which are accompanied with muco-enteritis, and thereby resemble the disease as it generally appears in Paris. The connection of the two affections does not appear to me to be clearly established, as I have not unfrequently seen the rash, without any important irritation of the stomach or bowels; and have often witnessed well-marked and serious complications of "gastro-enterite" without being able to detect the slightest appearance of the rash.

The treatment I have adopted in all cases of simple fever has been pretty uniformly the same, and has been essentially of the "médecine expectante" kind. My object has been safely to guide the patient through his complaint, by meeting and combatting symptoms as they

arose, rather than by the adoption of strong and active measures, and the employment of heroic remedies, to expose him to a chance of greater danger, with the vain hope of cutting short the complaint. In almost all cases, the hair has been cut short, or the head shaved, and cold evaporating lotion applied to the scalp, according to the amount of heat, pain, or heaviness of the part. The bowels have been opened by castor oil, and an occasional dose of Hydr. c. Creta, and when diarrhœa has existed, it has been checked by chalk mixture. The common medicine prescribed has been 12 or 15 grs. of sesquicarbonate of soda, in mint water, three or four times a day. At a time varying from the seventh to the twelfth day, according to the age and vigour of the patient, support, in the form of beef tea and arrow root, has been prescribed, and stimulants administered. These have been repeated or temporarily withheld, according to their effects. Under this simple plan, the complaint has generally proceeded to a favourable termination. If decided evidence has existed of inflammation of the mucous membrane of the ilium, the application of six or eight leeches over the part affected, with fomentations, and a starch enema, with ʒj. or ʒij. of syrup of poppies, or ℥xv. or xx. of laudanum, repeated once or twice daily, has usually been efficient in removing it.—Whether the soda has really been beneficial, by altering and improving the condition of the blood, as is believed by Dr. Stevens and others, or whether its virtues are simply negative, and its operation purely passive, I have not yet had the opportunity of deciding, but intend to submit to the test of experiment, as far and as fairly as I can conscientiously do so. That patients suffering under the simple continued fever of this country generally progress well under the use of soda, can be attested by cases so numerous as not to admit of doubt; but I am not aware that it has yet been proved that they would not do equally well, if simple medicated water were alone administered; the same precautions being used in both cases, to remove any complication that may arise. The most difficult matter in the treatment of fever has ever appeared to me, to decide upon the proper time for commencing the administration of stimulants. I have not had sufficient opportunities of testing the mode of arriving at a decision upon

this important point, proposed by Dr. Stokes, to be able properly to estimate its advantages; but from the very few cases in which I have applied it, I am led to fear that it will not be found so generally and so practically useful, as that gentleman's personal observation induced him to believe. When doubt has existed, I have hitherto found it desirable to commence with the mildest form of stimulant; and carefully to watch its effect. For this purpose I have sometimes used the tincture of calumba, which I have often seen prescribed, under similar circumstances, by that excellent practical physician, the late Dr. Cholmeley: and on other occasions have ordered the simple infusion of serpentry. If these have been borne without injury, or with advantage, the quantity has been increased, or ammonia and wine have been cautiously added with good effect.

The following case is perhaps worth recording, in consequence of the painful affection which succeeded the fever:—

Theodosia Forster, aged 14, a thin, delicate girl, was first seen by me August 6th, 1839; and was then in the fourth or fifth day of fever, for which she had been attended by a practitioner in the neighbourhood. Her complaint was accompanied with vomiting and diarrhœa, red tongue, tenderness at the scrobic. cordis, and in the right iliac fossa; and other symptoms of inflammation of the mucous membrane of the stomach and bowels. Leeches were ordered to be applied over the cœcum, and a large thin linseed poultice over the abdomen; gr. iiss. of Dover's powder were given at bed-time, and chalk mixture and arrow-root during the day. The next morning, the tenderness was much less; but the diarrhœa continued. She was already much exhausted, and I feared that she would not have sufficient power to support the continued drain to which she was subjected. She was ordered

Syr. Papaver. ʒj. Decoct. Amyli ʒij. M. ft. Enem. statim injiciend. et repetend. vespere si opus fuerit. Inf. Serpentar. ʒiiss. Syr. Papaver. ℥xx. Conf. Arom. gr. xv. 6tis. horis sumend.
Mist. Cret. ʒiiss. Vin. opii. M. iij. Conf. Aromat. gr. x. pro re nata urgente diarrhœa. Contr. Catapl.

On the 8th, the diarrhœa had in a great degree ceased, but she was troubled with frequent vomiting, on account of which, acid. hydrocyan. dilut. ℥ij.

were added to her tonic mixture. Under the use of this medicine, together with from three to five grs. of Dover's powder at bed-time, she continued to improve till the 13th, when she complained of a suddenly supervening and very acute pain, in the middle of the inner side of the right thigh. There existed not the slightest tension or redness, though the exquisite tenderness rendered it impossible to examine it minutely. She was perfectly incapacitated from raising or otherwise moving the thigh; but did not suffer from passive motion, if the part affected was not touched. She had no pain on rotating the thigh outwards, or on firm pressure being made upon the trochanter major; nor any inconvenience from examination of the knee, the hip-joint, or the groin. The pain was supposed to be neuralgic, and she was ordered to continue her medicine, and use an opiate liniment. On the 15th, the pain was even more acute; and now affected the knee as well as the thigh. Still no tenderness could be discovered about the hip joint, and there was not the slightest febrile excitement; but as some tenderness was felt on pressure being made over the sacrum, a blister was applied to this part, and a belladonna liniment ordered for the thigh and knee. A little temporary relief was afforded by the blister; but no permanent benefit resulted. Vapour baths were afterwards used with much benefit; but their good effects were of short duration. On the 29th, the pain was equally severe, and the inability to use the limb as perfect as before. She had no quiet rest, and her sleep was almost entirely prevented. Forcible rotation outwards, and firm pressure on the trochanter, still caused no inconvenience; but I now discovered that there existed some tenderness on pressure over the hip-joint, in the groin. Leeches and fomentations were therefore applied to this part, and a blister behind the trochanter. Relief decided but only temporary was obtained. Her general health being now good, with the exception of the debility kept up by the continued pain of the thigh, of which she alone complained, she was transferred to the care of the surgeon. This gentleman ordered a repetition of the leeches, and subsequently applied strengthening plasters, spread upon thick leather. After three months she was sent into the country, and now feels no incon-

venience from her former local affection, excepting a little stiffness in the hip in cold weather, and after more exertion than usual.

The two fatal cases were the following:—

M. A. Johnson, aged 42, a short, rather stout woman, of healthy appearance, after nursing her daughter in a severe attack of continued fever, became herself the subject of that disease, July 2nd, 1839. Under the ordinary treatment, mentioned above, she went on exceedingly favourably till the seventh or eighth day of her complaint. Her tongue was indeed dry and black; but her pulse was by no means very feeble. She was not troubled with cough, had no diarrhoea; neither did she labour under any important head affection, being subjected only to slight delirium at night. She was taking serpentary and ammonia with apparent benefit; in fact she had not a single bad symptom, excepting a settled and expressed conviction that she should die. It has been quaintly observed, "that patients who are determined to die, are rarely disappointed," and however it may be explained, the fact is certain, that persons upon whom this settled conviction rests, in acute diseases at least, very rarely recover. This patient was not an exception to the general rule, as upon calling on the eighth or ninth morning I was informed that she had been seized with a fit during the previous night, and had suddenly expired. No examination was permitted.

John White, aged 33, a large powerful man, came under my care March 5th, 1840. He was by occupation a coal-heaver, and of very intemperate habits. A week before I saw him, he was prevented going to his work by shivering head-ache, and pains of the bones. Two days after, his head became more severely affected, and the following day he was seen by a practitioner, who believing, from the symptoms, that he laboured under cerebral congestion, bled him to xxx and administered an active purge. The next day he was much relieved, and was not again seen by any medical man, till the eighth day of his complaint, by myself; when he was lying on his back, with a flushed and purple face, and dilated and sluggish pupils; his senses were obtuse, but he answered intelligibly to questions proposed, and complained of head-ache,

sore throat, and tightness of the chest, which was quite resonant on percussion, but over the whole of which a large mucous rattle was distinctly audible. The skin was hot and dry, and on the chest and abdomen were sprinkled a few pink and measles-like spots; the tongue was coated and moist, not red at tip or edges; pulse 112, full, but feeble.

Appl. Empl. Cantharid. sterno. Lotio Evaporans fronti et Capt. Antim. Potassio Tart. gr. $\frac{1}{2}$ Sodæ Sesquic. gr. xij. Julep Ment. ζ iss ter die.

7th.—Little alteration—bowels relaxed—cough troublesome.

Ext. Conii gr. iij. Pil Hydrarg. gr. j. Pulv. Ipecac. gr. j. M. ft. Pil. 6tis. horis sumend. Mist. Cretæ, pro re nata. Arrow Root.

8th.—Bowels less relaxed—pulse more feeble—pupils dilated—some delirium at night—lips dry, and sordes about the teeth—lay in a lethargic state, but could be roused.

Empl. Lytiæ nuchæ applicand. R. Inf. Serpentariæ ζ iss. Ammon. Sesquicarb. gr. iij. Conf. Aromat. gr. x. 6tis. hor. Beef tea and arrow root.

9th.—Much the same. He suddenly and unexpectedly expired in the evening. After taking some beef tea, with some relish, and apparent benefit, he was left for a few minutes, and upon the return of the attendant was dying. No examination was permitted.

ON THE PREPARATION OF EXTRACT OF CONIUM.

To the Editor of the Medical Gazette.

SIR,

Some few years ago I was particularly struck with a paper which appeared in your pages, from the pen of Mr. Richard Battley, containing an account of some experiments on conium, and its preparations.

The views he took seemed to me so new, and the reasoning he adopted so feasible, that I have been induced to investigate the subject.

Upon referring again lately to the paper, I find Mr. Battley is of opinion, that the action of conium is dependent upon the green resinous matter which it contains, as the following extract will shew:—

“The medicinal properties being thus evidently contained in the green resinous matter, the question arises, in what form it can be most beneficially administered? The present mode of preparing the extract, by evaporating the expressed juice till it acquires a proper consistence, is obviously defective.”

That the ordinary method of preparing the extractum conii is objectionable and greatly defective there is no doubt; but to suppose that the action of the extractum conii is dependent upon the green resinous matter, is an assertion, I think, not borne out by experience.

I have paid some attention to the preparation of this extract, because its value is, I consider, not duly appreciated by medical practitioners, probably from the careless and defective manner of manipulating. From personal observation I am inclined to believe, that the action of conium depends upon the quantity of conine which it contains; and, if such be the case, that preparation will be the most certain and efficacious which contains the largest quantity of this active principle. I am well aware that most pharmacists entertain the same idea that Mr. Battley does, and imagine, that extract of conium, to be good, should possess a beautiful green colour.

This is not at all essential to the activity of the preparation; for, upon examining the extract procured from various sources, those which assumed the worst appearance to the eye, have been found to contain the largest quantity of conine.

In the same volume of your journal will be found a paper, read by Mr. Judd to the Medico-Botanical Society of London, on the strength of various vegetable preparations; and amongst them the extractum conii is mentioned: compared to that procured from Mr. Squire, Mr. Battley's was found to be minus in activity, although possessing a beautiful green colour.

The best and most effectual mode of administering conium is, I conceive, by expressing the juice, and preserving it with alcohol; some of which I have had the honour of submitting to the best authorities on the subject: which, although resembling in colour the tinct. zingiberis of the London Pharmacopœia, contains a very large quantity of conine, and is a very energetic and certain preparation. To ascertain whether conine be present in the extract, it is only necessary to rub a small quantity in a glass

mortar with liquor potassæ, when a peculiar odour, somewhat resembling animal oil, will be given off; by bringing the vapour of hydrochloric acid in contact with which, dense white fumes will be given off, clearly demonstrating the presence of conine. The evaporation of this juice under the exhausted receiver of an air-pump, produces an extract of a dullish brown colour, but possessing great power, which can only be referred to the conine which it contains, and which may be readily recognised by the above admirable test, first proposed by Dr. Osborne.—I am, sir,

Your obedient servant,

EDWARD BENTLEY,
Oper. Chemist to H.R.H. the
Duke of Cambridge.

Laboratory,
41, Moorgate-street,
May 4, 1840.

RUPTURE OF THE UTERUS.

To the Editor of the Medical Gazette.

SIR,

The following case may be interesting to some of your readers. Your inserting it in your journal will oblige

Your most obedient servant,

JOHN JACKSON, M.D.
Lecturer on Forensic Medicine.

Glasgow, 21, Maxwell-Street,
April 27, 1840.

On the afternoon of 6th April, 1840, I was sent for to attend Mrs. C—— during her confinement. She was a stout healthy woman, 32 years of age, and had borne five children. Her recovery from her last labour had been protracted, which she ascribed to violence used by the midwife when extracting the placenta. On my arrival, I learned that she had experienced regular pains since ten o'clock, morning. By examination, I found the os uteri dilated to the diameter of a shilling, and the presentation to be natural. The pains were neither frequent nor severe. Seeing no need of my constant attendance, I left her, promising to return at ten o'clock in the evening. On my return, I was told that the labour, during my absence, had been progressing, and that the pains were getting somewhat severe and bearing down. The os uteri was felt to be well dilated, the head entering the pelvis. The labour continued to go on favourably. The pains were regular, and effective in advancing the head, but

in no way unusual. By two o'clock next morning, "the bag of waters" was protruding from the vagina, the head was nearly on the perineum, and every thing prognosticated a safe and immediate delivery. Soon after, the membranes burst, and a quantity of water was discharged. The pains now ceased; she got anxious and impatient, complained of cramp in the left leg, and desired to be instrumentally delivered. The pulse was weak; the skin cold and clammy; the countenance pale and death-like; the breathing embarrassed, and accompanied with a mucous rûle. The abdomen was somewhat prominent and irregular, not painful on pressure. No part of the fœtus could be felt immediately under the abdominal parietes. The head had not receded. A small quantity of blood had, for the first time, escaped from the vagina. Not being able to account for these symptoms, except on the supposition that the uterus had been ruptured, I thought it proper to attempt to save her life by immediate delivery. I called in the assistance of my friend, Mr. Boag. With his sanction, and the consent of the husband and patient, I proceeded to deliver. I applied the forceps, but they slipped. I then opened the head, and delivered with the crotchet in a few minutes. The child was of the full size, and of the male sex. The cord was round the neck. The placenta shortly after came away, with a little traction. She died at half-past five.

Thirty-two hours after death, I inspected the body, in the presence of Messrs. Boag, Douglas, and Jackson. The abdomen contained about 2 lbs. of dark coagulated blood. On raising up the uterus, a longitudinal rent was seen in its posterior inferior part, passing through the centre of its cervix. Four fingers could be easily passed through the rent into the cavity of the uterus. On measurement, it was found to be four inches in length. The coats of the uterus were healthy, but quite destitute of blood. The viscera of the abdomen were normal.

This melancholy case tends to shew that rupture of the uterus may take place without any symptom leading us either to fear the approach of such a terrible accident, or to become immediately sensible of its occurrence. The case was apparently a very favourable one: the presentation was natural; the pains

were regular and effective, but not unusually powerful; the os uteri was fully dilated; the waters were formed, and the head was well advanced. She did not complain of pain fixed in any one particular part, neither was she restless nor crying out "that she is ready to burst if something be not done for her." When the uterus was ruptured there was no particular symptom, and I, after a little time, was convinced of its occurrence as much by negative as positive symptoms. She did not feel any thing giving way within her; the head did not recede, and no part of the fœtus could be felt immediately under the abdominal walls. From this case, then, I am inclined to think that rupture of the uterus occurs much more frequently than is suspected; most medical practitioners having been led to expect that it is marked by some decided symptoms. I am corroborated in this opinion by a very able accoucheur of this city, who lately mentioned to me, that he has been called in consultation in nine cases of ruptured uterus, and in no one case was its true nature known before he saw the patient, notwithstanding two, and sometimes three, surgeons had been in attendance.

TALIACOTIAN OPERATION.

To the Editor of the Medical Gazette.

SIR,

SHOULD you deem the following successful case of Taliacotian operation, sufficiently interesting for a place in your valuable journal, will you oblige me by its insertion.—I remain, sir,

Your obedient servant,

W. H. SLAGGETT,
Dresser.

London Hospital, May 11th.

Henry Osborn, æt. 7, was admitted into the London Hospital on February 25th, under the care of Mr. Scott.

On the 23d inst, he fell with a jug in his hand, the fragments of which, in his fall, excised the whole of the cartilaginous part of the nose, at its junction with the nasal bone, at the same time cutting out a triangular piece of the upper lip. He was not brought into the Hospital until the 25th inst., at which time the wounds were all healing. Ordered warm water dressing.

April 3d.—The wounds being healed,

and the child's health good, at 2 P.M. Mr. Scott performed the Taliacotian operation in the following manner.

The proper size of the flap was first marked in ink on the forehead, and formed a triangle, extending over the centre of the forehead, the apex being situated over the nasal process of the frontal bone. An incision was first made through the integuments and muscular fibre, to the periosteum, from which latter it was reflected, remaining attached to the forehead by a neck of skin. The flap was turned down, so that the skin was placed externally, and united to the already pared edges by fine ligatures. A septum was then formed by a longitudinal piece being cut out of the upper lip, and turned up to meet the flap, with which it was united by a pin and ligature. The divided edges of the lip were brought together by hare-lip pins, and a plug introduced on each side of the septum, so as to keep the opening of the nares patent. The whole was then lightly covered with Emp. Plumbi, and lint, wetted with warm water, ordered to be kept constantly applied.

6, P.M.—The child being very restless, Tr. opii. grtt. v. were given.

6th.—The dressings were removed this morning; the new nose is completely united to the original structure; the septum is also united. The wound on the forehead is granulating. The pins and ligatures are all removed, and the wounds dressed with Emp. Plumbi, warm water being kept applied to the nose and forehead. The plugs are re-introduced.

April 21st.—The neck of integuments, communicating with the forehead, was divided this morning: the child's health is good.

May 6th.—The nose has entirely healed, having been dressed daily, and the plugs kept constantly in the nostrils.

OVARIAN DROPSY.

PARACENTESIS PER VAGINAM.

To the Editor of the Medical Gazette.

SIR,

SHOULD you consider the following case worthy of a place in your valuable journal, it is much at your service.

I am, sir,

Your obedient servant,
JAMES OGDEN, Surgeon.

Rochdale, April 28, 1840.

Mrs. Jackson, æt. thirty-two, the subject of the present case, had been generally healthy until the birth of her last child, about five months previous to the date of her present illness, when the catamenia ceased. On the first intimation of her illness she felt sickness of the stomach, was averse from exercise, and had urgent thirst, with scanty urine. About two months previous to these symptoms, she had a sense of considerable fulness and swelling, which, from her description, seemed to arise out of the pelvis, extending at length from the left side of the pelvis to the umbilicus: on examining the abdomen, no pain was elicited by pressure. She was induced to believe that she was pregnant, and consulted me particularly on that subject, as well as on account of much difficulty which she experienced in passing her urine; and this, together with other symptoms, she ascribed to a nephritic origin. The difficulty in relieving the bladder increased to such a degree as to require the use of the catheter, and on making the attempt I found it utterly impossible to pass it, on account of the tortuous state of the meatus urinarius. On examination per vaginam, I discovered a tumor occupying the hollow of the sacrum, and allowing little more than a finger to pass between it and the pelvis. A segment of the os uteri could with difficulty be felt above the pubes, which led me to suppose, on the first impression, that there was retroversion of the uterus. On the left side of the vagina I found an elastic tumor, which I at first took to be the fundus of the bladder. No urine had been passed for more than twenty-four hours, and as the patient was now suffering extreme pain in consequence, I was somewhat alarmed for the safety of the bladder, and called to my assistance Mr. Beeckley, surgeon, of this town, who, as well as myself, made several fruitless attempts to pass the catheter. In this dilemma, I punctured the bladder above the pubes, and abstracted two pints of high-coloured urine. In six hours after, as no water had been evacuated per vias naturales, I again attempted to pass the catheter, and was again foiled. On a second consultation we determined to puncture the tumor in the vagina, being now convinced that we had an ovarian disease to contend with, and as a speedy removal of pressure was necessary, we agreed to pass a trochar into the tumor in the vagina, and

drew off four quarts of a semi-transparent fluid, which gave the patient great relief and restored the action of the bladder, she being able to void her urine in an hour after the operation: the discharge from the ovarian sac continued for several days, and a permanent cure followed. She has never menstruated since the catamenial suppression, which occurred five months before the operation was performed, notwithstanding which she has, with the aid of occasional bleeding, enjoyed good health up to a late period. The fact of paracentesis per vaginam having proved a permanent cure for this disease is however rare; and although we cannot possibly expect the like to be the case, where there are many cysts in a state of progressive enlargement, where the accumulated fluid is of a morbid character, or where there is any other diseased organization of the ovary, still the rationale of the cure in the present case becomes an object worthy of inquiry, and the multiplication of facts tends to facilitate the desired explanation.

RUPTURE OF THE INTESTINUM ILEUM.

To the Editor of the Medical Gazette.

SIR,

SHOULD you deem the following case of rupture of the intestinum ileum, from the kick of a horse, sufficiently interesting for a place in your journal, you will oblige me by its insertion.

I am, sir,

Your most obedient servant,

THOMAS WILLIAMSON, M.D.

One of the Physicians to the Leith Dispensary,
and Edinburgh and Leith Humane Society, &c.

Leith, May 7th, 1840.

John Slater, æt. 19 years, a stout healthy young man, by occupation a carter, was reported to have received a kick on the abdomen from his horse, on the evening of Friday, the 1st May, about 9 o'clock, whilst taking him into his stable for the night. Immediately upon the receipt of the injury, he complained of severe abdominal pain, and walked with little assistance to a friend's house (a distance of about one hundred yards), where he passed the night in great anguish, owing to the abdominal pain, with excessive and continued

vomiting, the latter symptom having made its appearance about two hours after the accident. About 7 A.M. on the morning of Saturday the 2nd, he left the house where he had passed the night, and walked, with the help of his sister, to his own house, a distance of about three hundred yards more: immediately upon his arrival, I was requested to visit him, which I did without delay, and found him still complaining of the abdominal pain, the principal seat of which he referred to the umbilical region; this pain was greatly increased by the slightest pressure of the hand, and also during the efforts made to vomit. The fluid vomited was of a yellowish colour, and in great abundance, owing to the large quantity of liquids which he drank, in order to satiate an intolerable thirst; pulse full, 120 beats in the minute; tongue natural; countenance expressive of great suffering and anxiety; no external mark on the abdomen to be perceived. As all the symptoms indicated acute peritonitis, and considering the state of the pulse, it was deemed advisable to abstract blood from the arm; accordingly a vein was opened, but ere three ounces had flowed, the impression made upon the pulse was so powerful, as to render it necessary to abstain from abstracting more; for now it was almost imperceptible, and about 80 beats in the minute: notwithstanding, as the pulse in some degree rallied, and as the pain was nothing abated, leeches and a large blister were applied to the abdomen, and a laxative enema ordered to be given. About 1 P.M. of the same day, all the symptoms were aggravated, and the pulse scarcely countable; no abdominal tumor, or tympanitic distension, could be detected; the enema had been retained without effecting any good; urine passed freely. Mustard sinapisms were now applied to the inner surface of the thighs, with other remedies, but all to no purpose, as he continued sinking till 6 P.M., when he expired, twenty-one hours after he had received the accident, retaining all his intellectual faculties unimpaired to the end.

Dissection, 25 hours after death.—The abdomen, which was now greatly distended, being laid open, a large quantity of air made its escape: upon reflecting the abdominal parietes, no extravasated blood was observed under-

neath the peritoneum (as is sometimes seen in similar cases); the peritoneal cavity contained about two pints of a brownish coloured serum, with large masses of soft, and recently formed coagulable lymph floating in it; the peritoneal covering, throughout its entire extent, was the seat of very active inflammation, and covered here and there with lymph: none of the fecal contents of the intestine were visible in the abdominal cavity. Upon tracing the bowels from the duodenum downwards, we arrived at the ileum, which was found collapsed; and here, at its inferior third, we detected the seat of all the mischief, for it was now evident that this bowel had been completely torn across, so low down as its mesenteric attachment: the edges of the laceration were dark-coloured, and irregular, and altogether free of lymph deposit; no appreciable quantity of blood had followed this laceration: all the other abdominal organs were healthy.

REMARKS.—The case now described is one of considerable interest, as well from its rarity, as other circumstances connected with it. Without entering at all into any lengthened remarks, those who have perused the history of the case, as well as the appearances observed at the subsequent post-mortem examination, cannot fail to observe the total want of connexion between the severe internal lesion of the bowel, and the appearance of the external abdomen; for, as we have previously observed, not the slightest evidence existed externally, by which we could have at all hazarded the opinion that the abdomen had sustained so severe a blow as to produce the rupture of the bowel internally. It is well known that the liver and spleen may be ruptured by means of external mechanical violence from a blunt instrument, without the development of ecchymosis, or extravasation of blood into the tissue of the parietes of the abdomen: this important medico-legal fact can comparatively be easily understood and explained, when we consider the solid nature of the texture of these organs, as well as their relative position to the external part, which may have been the direct recipient of the blow; but, in the case before us, we have, in the first place, an object not of a very blunt nature, or rounded form, as the instrument by means of which the blow was inflicted, but on the contrary, in some places, angular and

pointed; yet, notwithstanding the internal mischief produced, we had not the slightest trace or evidence of external ecchymosis or extravasation; and in the second place, instead of having a comparatively solid texture, as the liver or spleen, we have the intestine (especially if moderately distended with air), presenting all that in our opinion *à priori* would lead us to infer it as being less likely of rupture from external violence; for, just in proportion as the quantity of air becomes diminished in the lung during pneumonia, and its place supplied with blood, does its friability of texture, and resemblance to the liver, increase: so that one would naturally infer, that the intestine was most dissimilar to the liver in this respect, in so far as, containing air, it would the more readily yield to the external blow received; it is, however, always more easy offering hypotheses or theories, than advancing satisfactory and reasonable explanations of phenomena sometimes observed. What can account, then, for the extensive rupture of which the ileum in this case was the seat? Are we justified in referring it to an *inordinate* distension of the intestine by air, at the time of the receipt of the injury? or, can we in any way ascribe it to the fact of the bowel at the time containing a larger quantity of *chyme* than usual, and thus diminishing the amount of its aerial contents? Whatever the true solution of the question may be, it is somewhat singular, that the ileum should oftenest prove the intestine most prone to rupture from external violence or blows. As death usually takes place very rapidly, in cases of perforation or rupture of the intestine, not so much directly from hæmorrhage or extravasation of the intestinal contents into the peritoneal sac, as from failure of the heart's action owing to the extreme depression of the nervous system, it may not perhaps be out of place to remark, in illustration of this, the very rapid and signal impression made upon the pulse, by the abstraction of only two or three ounces of blood, for, it will be recollected, that the pulse, previous to the vein being opened, was full (though not bounding), and that after the patient had lost the above quantity, it became feeble and thready.

PHYSIOLOGY OF THE IRIS.

To the Editor of the Medical Gazette.

SIR,

SHOULD the following case and observations appear to you deserving of a place in your valuable periodical, I shall be obliged by your inserting them.

I am, sir,

Your obedient servant,

W. P. BRODRIBB, M.R.C.S.

12, Bloomsbury Square,
May 9, 1840.

Whilst the phenomena of disease throw light on physiology, often confirming us in our opinions, and enabling us to regard many points as established truths, they not unfrequently shew us the imperfection of our present knowledge, and prove that much still remains to be investigated. This is the case with the functions of the iris of the eye. The generally received opinion respecting the physiology of this membrane, is, that by enlarging or contracting its pupillary opening, it can regulate the quantity of light admitted into the eye, according to the sensibility of the retina. That it performs this office is sufficiently obvious; yet disease presents circumstances which must be considered exceptions to this notion, and not to be explained by it. I have at the present time under my care a patient whose irides are in opposite conditions, and each iris the very reverse of what might be expected. The right eye is completely amaurotic, so as not to be able to distinguish light from darkness; yet the pupil is but slightly dilated, and the motions of the iris not much impaired. On the other hand, vision in the left eye is uninjured; but the pupil is very widely dilated, and the iris perfectly immoveable. When light is admitted into this eye, its iris remaining fixed, the pupil of the amaurotic one is seen to contract. The case is one of disease of the brain, and the circumstances are as follow:—In February last I first saw the patient, a young man, 30 years of age, of shattered constitution, from the combined effects of syphilis and the long continued use of mercury.

For some weeks he had suffered severe pain in the head, principally in front, though not confined to that part. To this succeeded erysipelas of the head and face, attended with fever, delirium,

&c. which left him in about ten days, when he first discovered that the sight of the right eye was gone. It was at this period that I first saw him, but whether the loss of sight was occasioned by the late more violent attack, or by the previous disease, I could not ascertain. No treatment controlled the disease, and in about five weeks more a drooping of the upper eyelid of the left eye was observed, which gradually increased until complete ptosis was formed, succeeded by paralysis of all the parts supplied by the third pair of nerves. The levator palpebræ lost all power to elevate the upper lid, and (with the exception of being able to turn it outwardly), from paralysis of three of the recti muscles and one of the oblique, the ball of the eye became fixed, so as to render it necessary to turn the whole head towards any object to be looked at. The ciliary nerves being supplied by the third pair, the motions of the iris were destroyed, and the pupil largely expanded. Such opposite conditions of the two eyes, each presenting circumstances at variance with the generally received physiology of the iris, render the case striking. There is nothing extraordinary in a contracted state of the pupil in amaurosis, as it sometimes occurs, yet such cases are exceptions to the general rule. Moreover, certain diseased conditions of the brain, in which there is no sensibility of the retina, furnish other instances of the pupils being similarly contracted. Dr. Baillie has recorded cases of apoplexy in which they were reduced to mere pin-hole apertures, and I have seen one instance of the kind myself; and generally, I believe, such a symptom is regarded as peculiarly fatal. In profound coma, produced by drinking a large quantity of ardent spirits, the pupils are sometimes much contracted, although more commonly dilated and insensible. Also in poisoning by opium, where complete coma exists, the same contracted state is generally observed. Such cases constitute a large number when assembled together, and although they may be considered as exceptions to a general rule, yet they must take place in obedience to some law at present unknown to us. Physiology and pathology reflect light on each other; and whilst there can be no sound pathology that is not based on the former science, the phenomena of disease furnish us with many proofs of

the deficiency of our physiological knowledge, and at the same time may guide us into right paths for its further improvement.

APPEARANCE

OF HOOPING-COUGH MORE THAN ONCE, IN THE SAME INDIVIDUAL.

To the Editor of the Medical Gazette.

SIR,

As medical knowledge should be beyond all other accumulative, I forward you the following facts:—Master —, aged almost five years, is now affected with hooping-cough, well marked by the characteristic hoop. When an infant of nine months he suffered from laryngeal irritation during dentition; and during his convalescence, hooping-cough, which was affecting three other children in the same family, attacked him. What is not a little remarkable, shewing the constitutional peculiarities in families, I understand, from the evidence of the medical attendant upon the family of this young gentleman's mother, that this lady has a brother and sister, both living, who have had hooping-cough more than once. They both had the disease for the first time when infants but a few months old: in the latter the recurrence took place at the age of seven; and the former caught the disease from children, his nieces, when he was five-and-forty years of age.

I am led to trouble you with the above particulars, from noticing the discrepancy of opinion among some standard authors on the subject. Dr. Copland, in his very valuable Dictionary, defines hooping-cough "as appearing but once during life;" Dr. Underwood says, it "never appears a second time;" Dr. Mannsell observes, in a qualified way, "the affection being one of those which *regularly* occur but once in the same individual;" and Dr. Guersent infers, from his immense experience at the Hôpital des Enfants Malades, that "il est rare qu'on l'ait plusieurs fois dans sa vie; cependant, j'en connais plusieurs exemples." (Dict. de Med. art. Coqueluche).—I am, sir,

Your obedient servant,

WM. ENGLAND, M.D.

Wisbech, May 6, 1840.

ON THE
PHYSIOLOGY OF DRINKS,

AND THEIR INFLUENCE ON THE BODY IN
HEALTH AND DISEASE.

BY MELBOURNE B. GALLWEY,
Assist.-Surgeon Royal Artillery.

WHILST the "master builders" of the profession are steadily advancing the science of medicine, and whilst contributions of some sort or other are daily coming in from the general republic, more particularly at a moment when the study of physiology is claiming especial attention, and exercising a practical influence on the treatment of disease, it is not uninteresting to witness the neglect with which subjects, apparently simple, are treated; but on which, in reality, we possess no substantial or positive knowledge. Yet, before we engage ourselves in questions of ultra perplexity, whilst we are busied in our inquiries into the "reflex function of the nerves," into the sources and origin of "animal heat," or in discovering the primary cause of the "respiratory movements," it would be well that we studied to make ourselves familiar with the operations of nature, as they influence the phenomena of hourly observation, and of matters which have relation directly and constantly to our physical interests and necessities, for

"To know
That which before us lies, in daily life,
Is the prime wisdom."—MILTON.

One of the subjects of this latter description, to which the attention of the profession has scarcely, if at all, been directed, is the physiology of drinks or of fluids. Who in the present day halts by the road-side of graver matters, to inquire into the fate of the ample potations we daily consume, to learn how they influence our system in health and in disease? Where shall we look for a writer on the subject? At least, for my own part, I know not where to find one. Physiologists have treated the matter with a levity which is singularly characteristic of their ignorance of the same, or if they have delivered themselves at any length on the subject, no practical, no useful deductions have ensued on their inquiries.

"It is singular," says Magendie, "that physiologists, who have been so much engaged with the digestion of solid food, and who have erected so many systems

to explain it, and made so many experiments to throw light on its nature, have never paid any particular attention to that of drinks; this study, however, presented fewer apparent difficulties than the former." "Fluids," says the same authority, "in respect to the alterations that they prove in the stomach, may be divided into two classes—the one sort do not form any chyme, the other are chymified wholly or in part." That is to say, there are nutritive properties contained within many of the liquids we employ, which render them as suitable for the formation of the chyle as more solid aliment; whilst others again are destitute altogether of such a quality, and in no wise contribute towards alimentation or nutrition. Milk, for example, is absorbed by the lacteals; it is a fluid eminently nutritious, and one which perhaps is converted entirely into chyle. Soups again are an illustration of the latter class of liquids. It is said, and I think there can be no doubt of the fact, that, in the stomach, a separation takes place betwixt the water of which these are composed, and the several ultimate ingredients which endow them with their nutritive qualities. It would seem that the lacteals are reluctant to meddle with liquids, which are not converted more or less into solids in the stomach; and this transmutation of form we observe to be the case with nutritive fluids in general. Thus milk is converted in the stomach into a solid or semi-solid substance by a process of coagulation denominated curdling, and soups having suffered a division in the stomach, viz. into the water and solid materials of which they are made up, the gelatine, osmazome, albumen, &c., (or the nutritive portion of such preparations) are chymified, and subsequently turned into chyle, preparatory to their absorption by the lacteal system of vessels; whilst the water which had entered into the decoction submits to the fate which belongs to that particular fluid, and of which I propose especially now to treat.

That water is absorbed, and ultimately carried into the circulation, must at once be admitted; but in what particular site of the alimentary tract it is so absorbed, is still a sub-judice question; whilst experiment has failed hitherto in determining by what particular system of vessels it is conveyed into the blood. "Water," says Magendie, "mixes whilst in the stomach with the mucus,

the gastric juice, and the saliva, which are found in it. It becomes muddy, and afterwards disappears slowly, without suffering any other transformation; the one part passes into the small intestine, the other appears to be directly absorbed."

Dr. Beaumont, in his remarkable work on Digestion, (a work which must ever claim our respect and attention, from the rare opportunity enjoyed by its author of ocularly witnessing the phenomena which he speaks of and explains,) informs us that he has found water, by experiment, "to disappear totally in less than ten minutes after being swallowed; but whether by absorption or through the pylorus, he was unable to determine." Wilson Philip, in his treatise on Indigestion, appears to maintain that a rapid absorption of water occasionally takes place in the stomach; and Magcagni, somewhere, I think, expresses a similar opinion.

But what are we to understand by the term absorption, as applied to the *disappearance of water* from the alimentary tract? Are we to rest under the assumption that it is taken up by the lymphatics of the stomach, and by the lacteals, in its transit through the intestines, in common with the chyle? This is not an uncommon opinion indeed; it is a view which many of our own countrymen adopt, more perhaps out of deference to Hunter, who inclined to this hypothesis, than that they are in any way able to prove it. Whilst there are others who contend that the absorbents have no power of influencing matters upon which the peculiar operation of the gastric juice has not been exerted; and it does not appear that a liquid, which holds neither animal nor vegetable substance in solution, is affected by that agent; for I may repeat, that the experiments of Beaumont establish the fact, that liquids which are suited to contribute towards alimentation, are converted into a state of solidity or coagulation antecedent to their passage through the pylorus; for example, milk, and the albumen of eggs.

Whether, indeed, the influence of the lacteals and lymphatics extends to such fluids as hold nothing nutritive in solution, is a question which will probably not be decided in our day, if indeed it be capable of solution at all. For experiments wanting apparently nothing in nicety of adaptation, and nothing in delicacy, have extensively been instituted, and that, too, with unwearied industry,

by the opposite factions which have mooted it; and few questions in physiology have been contested and defended by men of more brilliant capacities than has this celebrated one. I say, it will, probably, never be decided, although physiologists are not wanting at the present day, who assert that the question has long been set at rest. Magendie, the father and great agitator of the position, that the lymphatics do not absorb, or are not the only instruments of absorption, imagines he has substantiated it, by the following experiments, and others of a nature not differing materially from it. "Make a dog swallow a quantity of alcohol mixed with water, whilst he is taking his food. If half an hour afterwards its chyle is extracted, we shall see that this liquid contains no alcohol, whilst the blood exhales a strong odour of it, and alcohol may be reproduced from the blood by distillation." Again, "a dog swallowed 4 oz. of a decoction of rhubarb; half an hour afterwards the lymph was extracted from the thoracic duct. This fluid presented no traces of rhubarb; the half of the liquid had, nevertheless, disappeared from the intestinal canal, and there was rhubarb perceptible in the urine." Similar results ensued on making the experiments with a solution of camphor, and other odoriferous bodies. But the experiment, which to myself seems more decisively still to disprove the absorbing power of the lymphatics, as exerted on matters which contain nothing nutritive within them, is that which consisted in insulating a portion of intestine from all connection with the rest of the canal, except through the veins of the part, (taking especial care that no vestige of an absorbent lurked behind,) and filling it then with a solution of nux vomica, when within six minutes afterwards the usual effects of the poison appeared. These experiments would seem, in good truth, to leave little further to be wished for, and little more to be done; and associating them with the collateral facts, which give them additional support, I confess that they are conclusive, in my own mind, as to the correctness of the position taken up by Magendie. There seems to be this imperfection, however, about the experiment first alluded to, viz. that our inability to recognise the alcohol in the chyle is in reality no proof that it has not been amalgamated with it. We can as easily understand how the chyle may refuse to betray its constituent ingredients when

examined, as that analysis would be unable to discover the elementary parts of the food, after they have been finally vitalized into blood.

That liquids possessing no nutritive qualities are unabsorbed by the lacteals, is further borne out by another of Magendie's experiments, which consisted in tying the thoracic duct of a dog, and making him subsequently swallow a decoction of *nux vomica*. The animal expired as quickly as if the thoracic duct had been untouched. But here there is an objection again to the value of this experiment, as it bears on the question at issue. It is this,—that the simple impression of poisonous substances on the nerves of a part, will as certainly endanger the life of an animal, as though they had been introduced into the circulation itself. The learned Müller contends that the nerves are unable of themselves to take cognizance of poisonous agents, and that it is necessary the blood should directly receive them, in order that death may ensue. But the experiments of Brodie are decisive in disproving this latter position; and are forcibly calculated to convince us of the existence of such an influence. But Müller is more happy when he seeks to invalidate the deductions derivable from the last experiment I have noticed. "Since the thoracic duct," he says, "has sometimes in animals communicated with veins, for instance, branches joining the vena *azygos*, as in the hog; and since even a right thoracic duct occasionally exists, while the absorbent vessels have frequent communications with one another, the application of a ligature to the thoracic duct cannot absolutely prevent the passage of the poisoned lymph into the blood. Dr. Bostock observes on this question, that "concerning the contents of the lacteals, we have no decided proof of these vessels containing any substance except the elements of the chyle; and that although extraneous bodies have been occasionally found in them in minute quantity, these cases must be regarded as exceptions to the general rule;" and "*exceptio probat regulam.*"

Whether, therefore, we agree with Hunter and Monro, and their disciples, that the lacteals and lymphatics are the immediate and only agents concerned in absorption, indiscriminately of liquids containing no nutritive matters in solution, as well as of those which do contri-

bute to nutrition; or with Magendie, and his school, that the veins are the principal channels of absorption for liquids contributing nothing to alimentation, certain it is, that the fluids of either class are ultimately carried into the circulation, and that having so arrived at a common channel, they each, in their turn, are concerned in increasing the volume of the blood that is already contained in the vessels.

Now, supposing this much to be admitted,—that fluids, how different soever they may be in nature and properties, are ultimately carried into the circulation, (and this position, I apprehend, will not be gainsaid) it must equally hold good, I think, that the quantum of blood originally circulating in the vessels will at the moment of absorption be much augmented, and the vessels themselves, in proportion, distended. But then, says Paris, "It has very truly been observed that in healthy bodies, or such as are without any obstruction of the excretions, an unusual distension of the vessels cannot be produced, or at least long subsist; for it is evident that such an increased quantity of water in the blood will immediately pass off by one or other of the excretions; this effect, however, in itself, renders the operation of aliments of signal service in the treatment of the disease." I entirely agree with the argument employed in the passage I have quoted, and will go to the full extent of this writer's hypothesis, in as far as it applies to the body in health, and where the excretions are actively in play; but I am at issue altogether with him when he contends for its application in disease. And I feel a conviction that fluids are continually administered then, where their withdrawal is urgently called for, though the "*sufferings of Tantalus*" be added to the disease; whilst I am ready to admit that the waste-pipes of the system, viz., the emunctories of the kidney, the exhalants of the skin and of the lungs, are outlets sufficiently great and sufficiently well provided during a state of health, for the superabundant liquid contained in the vessels. I contend that engorgement of the vascular system is a consequence of its continued absorption, where the powers are oppressed with inflammatory or febrile disease; for, under these morbid conditions of the body, a cessation or diminution of the excretions is a primary and immediate consequence. The kidneys

no longer consent to eliminate urine; the skin grows impermeable, perhaps even to insensible perspiration. The watery vapour from the lungs is proportionably diminished; whilst the exhalant vessels of the intestines are in their turn as obstinately constricted. The propriety then,—the wisdom of distending the already bloated vessels, is a question that hinges entirely on the establishment of this position—have liquids the power, when absorbed under such a state of the system, of reopening the outlets, and of reestablishing the excretion; or is their tendency rather to aggravate the mischief, without overcoming the obstruction? Dr. Paris contends that their administration is called for under such circumstances; that, in a word, they are decidedly diaphoretic and, that the withholding them in fever is even injurious. And he reminds us that Galen and Celsus, with the physicians of the middle ages, were in the habit of giving their patients cold water to solicit diaphoresis in fever. In fever of a mild and ephemeral type, a practice of this kind may have its advantages; and, indeed, I allow it often succeeds in destroying the spasm which Cullen believes to give rise to the phenomena which constitute their essence, or in overcoming whatsoever agency may be concerned in their production. But in fevers which are protracted for weeks, and where art is unable to increase the discharge of urine or of perspiration, I see no advantage from distending the blood-vessels to a point beyond that which they have already undergone. And in obstinate phlogistic diseases the same must apply, but with yet greater import. Were I to hazard the assumption, that inflammations and fevers of obstinate continuance are aggravated and kept up by the inordinate quantity of fluids which we are in the habit of allowing our patients for the alleviation of that thirst which is a constant and attendant symptom on these morbid conditions, I might be charged with erecting an hypothesis which no appreciable facts could support. But theories, nay systems, have been raised on less plausible pretensions. And in support of my argument, or in disproof of the value of such as might directly oppose it, I might contend that we have yet to be informed of the benefits which are said to arise in the particular cases under notice, from a persistence in the

practice which I decry; and, that if its supporters deny it to be injurious, they have at least not succeeded in establishing its merits.

Woolwich, April 14, 1840.

[To be continued.]

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abrégé.”—D'ALEMBERT.

Pathological Observations on the Diseases of the Uterus. By ROBT. LEE, M.D. F.R.S., Physician to the British Lying-in Hospital, and Lecturer on Midwifery at St. George's Hospital. The coloured illustrations from original drawings by Mr. Perry. London: Churchill, 1840.

If this work be carried on as it has commenced, of which we have no reason to doubt, it will prove a magnificent contribution to medical science. The object is to illustrate malignant diseases of the uterus; fibrous, calcareous, and other tumors of the same viscus, as well as the effects of inflammation; and the various morbid conditions by which the organs are disturbed; the diseases of the ovaria, Fallopian tubes, and external uterine appendages; and lastly, the diseases of the gravid uterus and its contents.

The present part contains cases and depositions illustrative of malignant diseases of the uterus. Not fewer than forty-two cases are detailed in illustration, and the following conclusions drawn:—

“From these cases it will be seen that the fungoid tumor of the uterus, or cauliflower excrescence, scirrhus, carcinoma, and corroding ulcer, are merely different forms of the same malignant disease; that the morbid changes may commence in the mucous and muscular coats of the fundus and body of the uterus, though they are observed most frequently to begin in the orifice and cervix. It may be inferred, also, from these histories, that inflammation of the uterus does not give rise to cancer in any form; and that the progress of the disease to a fatal termination is never arrested by those remedies which subdue inflammation. Three of the individuals whose cases have been related were under thirty years of age, three between thirty and forty, sixteen from forty to

fifty, and fourteen from fifty to sixty. In ten cases there was either no pain whatever experienced in the uterus, or it was only a slight dull pain or sense of uneasiness within the pelvis. In the remaining cases the pain experienced was acute and lancinating, and extended to the sacrum, groins, and thighs, and other parts around the pelvis. Hemorrhage from the uterus, fœtid discharge of serum, mucus and pus mixed with blood from the vagina, and sickness at stomach, were the symptoms almost invariably present after ulceration had taken place. The hemorrhage from the uterus was most profuse, and the pain slightest, in the fungoid form of the disease.

"In the treatment of these cases, when the pain was severe; relief was occasionally obtained by leeches applied to the anus, hypogastrium, and groins, and cupping glasses to the sacrum. In no case was great benefit derived from the application of leeches to the os uteri. The frequent injection of tepid water into the vagina, decoction of poppies, solutions of opium, conium, lead, zinc, nitrate of silver, and chloride of soda, often diminished the fœtor of the discharge, and soothed the sufferings of the patients. The tepid hip-bath often afforded great relief; and the pain was frequently mitigated by friction with camphorated liniment and laudanum over the loins, lower part of the spine and sacrum, and the whole region of the uterus. The belladonna plaister over the sacrum was only useful in a few cases and for a short period. Excruciating pain was often diminished by an enema of laudanum, and a little warm milk or solution of starch. Solid opium, the liquor opii sedativus, the preparations of morphine, and the extract of hyoscyamus, were the most useful internal remedies.

"Neither the removal of the whole uterus by a surgical operation, nor the destruction of its orifice with caustic or other means, was considered justifiable in any case."

Four plates, executed in the first style of the art, are given in illustration.

MEDICAL GAZETTE.

Friday, May 22, 1840.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
publicum sit, dicendi periculum non recuso."
CICERO.

LATE REPORT OF THE POOR-LAW COMMISSIONERS.

IN our recent article on this subject, we discussed some of the flimsy apologies put forth by the Poor-Law Commissioners. They feel that their proceedings are as repugnant to the good sense of the people of England, as they are subversive of the dictates of humanity; and they endeavour, therefore, to persuade their readers that, were it not for their labours, rent would be swallowed up by poor-rates, and that a voluntary subscription raised by the charitable threatens the existence of the new economical reformation! At present we purpose to say a word or two on their conduct towards the medical profession; but before doing so, we would mention one point more relating to our former observations.

Mr. Assistant-Commissioner Tufnell, writing to head-quarters, praises the Commissioners and himself for the Cato-like austeri-ty with which he and they resist any relaxation of their rules. The public outcry, he says, is constantly directed against the "supposed inconsiderate harshness" of the Commissioners; and their rigid sense of public duty is the only reason they do not yield to it. Why, what foolish buttering of the Commissioners is this! Does not every human being know that the diminution of the rates is the tenure by which the Commissioners hold their snug offices?—and that by yielding to the outcry, and thus increasing the rates, they might lose 3000*l.* a year a-piece? We are perfectly certain, moreover, that were it not for the "outcry,"

the Commissioners would be too happy to knock another million or two off the rates, and realize the dreams of the most frugal economists. Nothing can be easier, when humanity is put out of the question. You have only to refuse all out door relief, and make the workhouses a few shades more intolerable, and therefore still better tests of extreme destitution. If the poor grumble, then, as Dogberry says, it is flat perjury; but if persons who keep gigs and are respectable, should prate about charity, or the like, the answer is ever ready, that they do not understand "the principle of population!"

It is said that a Highland chief, when asked what was to become of the numerous families whom he had ejected from his estate, to make room for sheep-walks, answered, "Loch Duich is deep enough for them all*!"

Some persons (more, perhaps, than would openly avow it) like the Loch Duich method; others sympathize more or less with their fellow creatures; but we take it that the disbelief in the benevolent intentions of the Commissioners is universal among all thinking persons, whether they are philanthropists or belong to the economical school of the Laird in the story. The only approximation to benevolence which can be conceded to them by the most indulgent critic, is of a very spurious kind. They hope for a Malthusian heaven upon earth; a millennium of celibacy and labourers' clubs; when whole generations of starvation shall have forced our husbandmen into supernatural prudence, and charity shall experience its euthanasia for want of objects to benefit. If any one should think this picture too highly charged, and should credit the pretensions of the Commissioners to philanthropy of a better sort, he will be painfully convinced of the truth of our

accusation, by their conduct as to medical relief; and will be forced to confess that in this point, as in every other, their "goodness wears the sterner face of love."

The claims of poverty, combined with sickness, are so strong, that they have always been considered irresistible; and until the iron age of the economists, even the dullest and coldest of men allowed the right of disease to relief. The benevolent go much farther, and instead of merely allowing the claim, would give it greater effect, and for this purpose would amend the machinery of society whenever it is insufficient for the purpose. Now it is clear, that under the old Poor Law, the medical arrangements for the relief of the indigent were lamentably defective. The salaries of the parish surgeons were absurdly small, and as we cannot reckon upon the tendered services of a thousand Howards, their attendance was scanty likewise. Hence, as the Commissioners are constantly boasting with a brazen voice of their regard for the comforts of the poor, it would have been well had they seized this striking opportunity of benefiting their unhappy clients. They tell us that they have diminished the poor rates by more than two millions sterling per annum. Be it so; then why not add one-fortieth part of this sum to the salaries of those on whose zeal the poor so materially depend? Instead of this, we have seen the horrid system of tenders continued, and medical officers pitted against each other till they agreed to attend the poor for sums which would not pay for drugs. In some observations by the Council of the British Medical Association, printed in the report before us, it appears that the average expense of each case of sickness, for medicines, leeches, surgical instruments, &c., was 4s. 3½d. in fifty-five hospitals and dispensaries; while in eight counties, the average sum for each case of illness (as

* Alison on the Management of the Poor in Scotland, 2d edit. p. 61.

deduced from the salaries,) for drugs, leeches, journey, and medical and surgical skill, was 3s. 3½d.; and in the metropolitan districts, the average sum for medicines, medical attendance, and skill, was 1s. 5¼d. a case.

The Commissioners, however, far from wishing to raise the salaries of the Union surgeons, till the reward somewhat approached the labour, have often threatened to bring down lads from London, if the established practitioners of the place were not sufficiently "reasonable." Now, the only want of reason in the tenders of the surgeons, seems to us to lie in the singularly small sums for which they offer to undertake the most onerous duties. These offers clearly demonstrate that however sensible each surgeon may be individually, the profession wants that reasonable *esprit de corps*, without which it cannot resist the attacks of a central despotism like that of the Poor Law Commissioners. No man has courage to ask for a fifth of the merited salary, when he knows that there is no tacit understanding to restrain other practitioners from offering to do the work for a tenth. Moreover, as parish surgeons always received salaries that were merely nominal, they have never ventured to raise their expectations to any adequate remuneration; the oppressed are satisfied with half justice, as he who has been accustomed to the rule of a miser sees liberality in the most frugal house-keeping. When Morton, in *Old Mortality*, returns after his long exile, Alice supposes that he will be "for keeping rather a mair house than puir auld Milnwood that's gane; and, indeed, I would approve o' your eating butcher-meat, maybe, as often as three times a-week—it keeps the wind out o' the stamack."

The Commissioners, however, are amply satisfied if the medical officers have butcher meat once a-week. As for keeping "the wind out o' the stamack,"

they reply, that they do not care to furnish the profession with carminatives—that is the doctors' look-out!

On the 21st February, 1830, the Commissioners addressed a series of questions to their assistants respecting the arrangements for affording medical relief to sick paupers, and their answers are given in the present report.

Among other things, they asked, whether dissatisfaction had arisen in any of the Unions as to the remuneration of the medical officers? To this Mr. Adey, assistant Commissioner for parts of Somerset, Gloucester, and Wilts, answers, "Yes; in fourteen Unions, on the parts of the medical officer."

Colonel A'Court answers for the counties of Southampton, Dorset, and Wilts, that "as well-qualified candidates are seldom wanting for any vacant appointment, I presume that the present salaries of the medical officers are considered reasonable; at the same time, I have often heard complaints as to the smallness of them."

Mr. Power, who is the satrap of Lancashire, and the West Riding of York, tells us, that, "in the Chorlton Union, the out-door medical relief is conducted by two medical officers at 5s. per case; and the total amount in this Union for one year has been £8. 12s. 10d.; which, added to their salaries for attending the two Union workhouses, gives a total amount of about £120 per annum."

The salaries of these two gentlemen, for attending the workhouses, are, therefore, about £30 a-year, or 1s. 8d. a-day, each: we hope that they rank among the "reasonable" ones.

Before we conclude this subject for the present week, we will just observe, that we must not assume that the surgeons are contented in those districts where no audible murmurs are heard. An ordinary knowledge of human nature will convince the inquirer, that oppression often derives its sharpest sting

from the danger of complaint; and this general rule was exemplified in the investigations of the Provincial Association, who found too many country practitioners afraid of denouncing the boards which ground them down. In such places one might rather expect to find a grim satisfaction expressed by those surgeons who had gained the suffrages of their masters, the Guardians, together with the privilege of supplying drugs to the poor out of their own pockets. It is thus that in those kingdoms, where even the shadow of freedom does not exist, and where argument is answered by the dungeon, the eternal cry is, "our father, the Emperor!"

PROGRESS OF CHOLERA.

DR. GRAVES has published in the Dublin Journal of Medical Science, a most interesting set of tables, illustrating the course and progress of cholera in this country. We regret very much that from their length it is impossible for us to transcribe them into our pages, but we are desirous that our readers should at least know where to find them (viz. Dublin Journal, March 1840). It is to Sir James Clark that the profession is indebted for these very important documents: it appears that, but for his exertions, they would never have seen the light. Dr. Graves observes, "These tables are taken from the official report presented by the Commissioners to William the Fourth, of which report but one copy existed; that copy was mislaid, and would have been lost to the world, had not Sir James Clark exerted himself to make it out, and by the aid of the Royal Librarian, it was at last found buried amongst an heterogeneous mass of papers in a drawer."

ROYAL MEDICO-CHIRURGICAL SOCIETY.

May 12th, 1840.

THE PRESIDENT IN THE CHAIR.

On Aneurisms, and especially Spontaneous Varicose Aneurisms of the Ascending Aorta and Sinuses of Valsalva, with Cases. By JOHN THURNAM.

AFTER some observations on the probable course and termination of aneurisms

limited to the lesser aortic sinuses of Val'salva, the author proceeded to the proper subject of his paper, on *spontaneous varicose aneurism of the aorta*, a form of disease which is new to pathologists. This lesion he stated to have been entirely overlooked by M. Breschet in his valuable memoir on varicose aneurism, although Mr. Syme had already detailed a case seated in the abdominal aorta and cava. After adverting to the interesting case published by Mr. Perry, in the 20th vol. of the Transactions of this Society, the author proceeded to the consideration of the lesion as occurring in the ascending aorta. He considered this part of the arterial system, including the aortic sinuses, as more liable than any other to the formation of such spontaneous intervacular communications, in consequence, principally, of its close contact with various parts of the venous system. He detailed eleven cases, and referred to the preparations from six others, in which spontaneous varicose aneurism had existed. Of these, two were seated in the descending aorta and inferior vena cava, and one in the arteria innominata and superior vena cava. The others were all seated in the ascending aorta (excepting one in the arch), and communicated, one with the superior vena cava, two with the right auricle, one with the right ventricle, and ten with the pulmonary artery.

He then proceeded to give the history of the disease, which he founded upon an analysis and comparison of these cases. He stated that the mode of communication between the aneurismal sacs and the venous system might occur in two principal ways, viz., either suddenly, and by rupture, in consequence of some effort on the part of the patient, or in a more slow and insidious way, by softening or ulceration of the walls of the sac. The symptoms which announce the formation of the varicose aneurism, under the first of these circumstances, were described, and were stated to resemble those of a rupture of the heart. The symptoms of the disease were divided into those connected, firstly, with the external surface and system generally; secondly, with the respiration; and, thirdly, with the state of the heart and great vessels. The most important of the general diagnostic signs were stated to be livor of the surface, or a distended and even varicose condition of the subcutaneous and other veins; severe and rapidly advancing anasarca: all these symptoms being limited to such portions of the body as are below, or the venous system of which is distal to the varicose orifice. When the varicose aneurism is between the descending aorta and inferior cava, the legs, scrotum, and lower half of the body, when between the ascending aorta

and the superior cava, the arms, face, and upper half of the body, and when between the ascending aorta, and one of the right cavities of the heart, or the pulmonary artery, the whole of the body, is the seat of the dropsical effusion. The dyspnoea is usually severe, and often attended by cough and bloody expectoration. The pulse is remarkably jerking, and there are, frequently, great emaciation, debility, loss of muscular power, and deficient animal heat, with sensorial disturbance, in the shape of delirium or coma. The physical signs were stated to be "a superficial, harsh, and peculiarly intense sawing or blowing sound, accompanied by an equally marked purring tremor, heard over the varicose orifice, and in the current of the circulation beyond it: this sound is continuous, but is loudest during the systole, less loud during the diastole, and still less so during the interval. The characters of the sound, as regards intensity and continuousness, will probably altogether distinguish it from any that is heard in ordinary cases of aneurism, or in valvular diseases of the heart."

The author then entered upon the consideration of the pathology, prognosis, and treatment of the lesion, including the rationale of the physical signs.

He also drew an interesting parallel between the symptoms of internal spontaneous varicose aneurisms, as developed in his paper, and those of the ordinary external or traumatic varicose aneurisms, as described by Hunter, Cleghorn, Scarpa, and Breschet.

The paper was concluded by some observations on aneurisms of the ascending aorta rupturing into the left cavities of the heart, and two illustrative cases were narrated.

PATHOLOGICAL DEPARTMENT.

DR. CLENDINNING IN THE CHAIR.

May 19, 1840.

Hydatids of the Uterus.

MR. NORTH exhibited a large quantity of hydatids recently expelled from the uterus, of a patient under his care. They consisted of a numerous collection of small-sized cysts, like small grapes or currants, attached together by pedicles, or floating loosely in a bloody-coloured fluid. The lady was presumed to be between the fourth and fifth month of her pregnancy. Previous to their expulsion, she had slight attacks of hæmorrhage, and occasional discharges of a watery fluid from the uterus.

After making some remarks as to the unfitness of the term *hydatid*, usually applied to these bodies, to designate their true character, Mr. North proceeded to ob-

serve, that, by all the best pathologists of the present day, it was agreed that they were a form of blighted or diseased ovum: that they were the result of a morbid change in the chorion. It appeared that these uniform cysts, clustered together like currants, were an enlarged or exaggerated condition of the small cysts attached by pedicles, which form the principal structure of the fleecy chorion, in the natural ovum. That such opinion is well founded, seemed to be proved by a series of about six preparations, which he had brought for the inspection of the members. These were aborted ova, in different stages of disease resembling that of the specimen on the table. In some of these preparations the chorion retained, in certain places, very nearly what we should allow was the natural structure of that membrane; while, in different parts of the same specimens, distinct appearances of the disease in question were manifest. A gradual conversion of the membrane, from its normal condition, to the diseased state presented in the specimen which he had just obtained, could be observed in the series of preparations.

Having offered some observations, in the next place, on the opinions commonly entertained as to the origin of this disease of the ovum, and as to the symptoms indicating its occurrence, as well as to the prognosis, he proposed the question to the Society—Whether the same kind of cysts or hydatids were ever expelled from the virgin uterus; in other words, whether this disease invariably depended or not on the presence of an ovum in the uterus? He knew that authorities of the highest name had declared that no authentic cases were on record, of a similar set of bodies being discharged by females, in whom there might not be well-founded suspicions of their having been pregnant. He himself, however, was acquainted with two cases, originally published in a Glasgow journal, by Dr. Andrews, where, from the facts detailed, he had no doubt that the cysts which were expelled were exactly of the same nature as those in the preparations on the table; and the females—young unmarried girls, in a respectable sphere of life—were altogether free from the suspicion of their having become pregnant. He put it to the Society whether there was any morbid condition of the uterus, independent of impregnation, by which the discharge of such hydatids could be satisfactorily accounted for. He was aware, and it was a point of importance to remember, that if, after delivery, a portion of the placenta remained adherent to the uterus, a change might take place in the structure of that fragment; so that in process of time, a disease of the nature at

present under discussion might be generated from it; and accordingly a female—for example, a widow—might have a discharge of such hydatids from the womb without any fresh impregnation. But in a medico-legal point of view, as well as for other obvious reasons, it was important to determine whether the hydatids referred to were ever found in a uterus where conception had not taken place; and that question he begged to put to the members of the Society.

Mr. E. Wilson was of opinion that the particular disease under discussion was invariably the production of an impregnated ovum morbidly affected. He stated his belief, although he was not prepared to give proofs of his views, that, in virgins, ova frequently escaped from the vesicles of De Graaff, and were conveyed along the Fallopian tubes to the interior of the uterus. But such ova were never matured—never had a chorion investing them. The formation of this membrane could only occur as a consequence of impregnation; and as the production of the so-called hydatids depended, in his opinion, on the presence of the chorion, he regarded the existence of the disease as certain evidence of previous conception.

Dr. Hodgkin coincided with the last speaker in considering that the cluster of cysts, very erroneously and absurdly regarded by some as entozoa, and hence termed hydatids, were always to be traced to the previous existence of an impregnated ovum within the uterus. The fœtus was seldom or never to be detected. Hence, if we pleased, in order to relieve the minds of friends, when doubts gave rise to uneasiness, we might say that this evidence was wanting to establish the fact of conception: and yet how the fœtus, in such a morbid condition of the chorion, should not undergo its proper development, and should not be recognizable in the discharged mass, we cannot be at a difficulty to understand. He had frequently, and for many years back, examined the appearance of the cysts in question, with particular care, and he was convinced that they were degenerated vessels of the chorion, a peculiar form of dilated vessels, the trunks and ramifications of which were more or less visible in different stages of the disease; and served to connect the cysts together in their characteristic clustered form. He did not altogether agree with Mr. E. Wilson, in supposing that ova could be transmitted, in the virgin, from the ovaries to the cavity of the uterus, or that they were conveyed along the Fallopian tubes. He did not doubt that the vesicles of De Graaff were frequently ruptured in virgin females; but as to what took place, in such occurrences, afterwards,

he did not venture, from want of evidence, to express any opinion.

Two cases of Tumors situated between the Cerebellum and Pons Varolii; and compressing these parts.

Mr. Shaw exhibited two specimens, obtained from different patients, of tumors lodged in corresponding situations at the base of the skull, and in neither case had any distinct cerebral symptoms been manifested during life.

The first specimen was removed from a female, 69 years of age, brought into the dissecting room of the Middlesex Hospital School, during the past session. The required certificate of the medical attendant attested that she had died of asthma. On turning out the brain, for the purpose of dissection, a tumor somewhat larger than a pigeon's egg was found lodged between the right lobe of the cerebellum and the inferior part of the pons varolii. One third of the tumor was imbedded in the part corresponding in situation with the crus cerebelli, while the remaining two-thirds projected above the level of the cerebellum. A considerable indentation was formed, for the lodgment of the lateral part of the tumor, in the side of the pons varolii. A lobe of the tumor, of the size of the point of the thumb, was also found fitting into a corresponding depression, or excavation, in the petrous portion of the temporal bone. The preparation of the temporal bone, containing this deep sulcus for the reception of a part of the tumor, was exhibited by Mr. Shaw, and it was seen to have been formed in the situation of the foramen auditorium internum. The margins of this foramen were absorbed to some extent around; so that the interior of the cochlea was disclosed to view, and the canal for the transmission of the portio dura was seen commencing near the hiatus Fallopii, on the anterior aspect of the bone. Notwithstanding there was this extensive removal of densely formed bone, there were no indications of disease in the immediately adjoining parts: a thin membrane, continuous with the dura mater, covered the surface of the depression, and the lobe of the tumor, although inserted into the sulcus, did not adhere to its bottom; but, on the contrary, was easily turned out from it. It was particularly observed that all the structures surrounding the tumor presented a perfectly natural appearance; that is, no adhesions were contracted; there was no opacity of the membranes, and, on the whole, there were no indications of the presence of the tumor having given rise to inflammatory action.

The only nerves which were directly affected in their course by the tumor,

were the *portio mollis*, and *portio dura* of the seventh pair. In regard to the former, no trace of it could be discovered; and it was inferred that it was totally destroyed. In reference to the *portio dura*, this nerve was seen taking its course over the surface of the tumor, and mounting upon its most prominent part. It was closely adherent to the investing membrane of the tumor, and was spread in a flattened, ribbon-like form upon it. Its fibrils retained the white pearly lustre which characterizes the nerves at their origins.

Being curious, from finding these appearances, to ascertain more precisely the condition of the patient during life, Mr. Shaw visited the surgeon of the infirmary where she died. He learned that the woman had been long an inmate of the workhouse; but that there were no symptoms which the medical gentleman could ascribe to cerebral affection. She had been bedridden for some time, but could nevertheless walk when required to get out of bed. She had no paralysis, had not been subject to fits of any kind, and her intellects were not perceptibly impaired. Particular inquiries were made as to whether the muscles of her face were paralysed; but it was stated that no defect of motion had been observed in them. This statement corresponded with the appearance of the face in the dead body, which did not exhibit any signs of distortion, or of the inflammation in the conjunctiva of the eye, so common in cases of paralysis from disease of the *portio dura*. The muscles also, whose action is controlled by this nerve, were found on dissection to present the usual red fleshy appearance of muscles possessed of their natural powers, instead of having the white blanched appearance which distinguishes muscles deprived of their action for some time.

The second specimen was taken from a lady, whom Mr. Shaw had frequent opportunities of seeing during her lifetime. The tumor in this case was also about the size of a pigeon's egg. It was situated upon the *crus cerebelli*, to which it was attached by a narrow base; and it had formed a considerable indentation upon the side of the *pons varolii*, to which it was also slightly adherent. It contained within it a fluid of the colour of urine, the walls being composed of a substance in point of consistence between membrane and medullary matter, and possessing considerable thickness. In this patient there were no symptoms, till within a few days of her death, of any general cerebral affection, such as stupor, paralysis, or convulsions. But she suffered intense and constant pain in all the surfaces of the head, and, moreover, was deprived of the sense of touch, in the same parts where the pain

was experienced. The cause of this acute pain, and want of sense to impressions, is to be understood when we observe that the fifth pair was completely involved in the substance of the tumor. The disease has had the effect of insulating the sensitive surfaces of the head, supplied by the fifth nerve, from the sensorium; while, by the irritation which the tumor produced, painful sensations, referrible to the parts supplied by the nerve, were experienced at the same time.

Dr. Williams observed, that the cases just related by Mr. Shaw offered striking illustrations of the extent of change which the brain might sometimes undergo in its most important parts, when that change was effected gradually. From the appearance of the tumors there can be no doubt that they were slow in their growth, and had been unattended in their development with inflammatory action. He had of late enjoyed several opportunities of witnessing changes of a remarkable extent in the substance of the brain, where the symptoms of disease had been most obscure, if not totally absent. One of the cases he shortly related. It was that of a man who, eight years before his death, had suffered from fracture of the skull, with depression, but who had recovered. He was subsequently seized with paraplegia, from the complicated effects of which he died. Upon examination of the brain there was a very considerable depression of a part of one of the hemispheres, at the seat of the fracture. It was also found that in various distinct parts ramollissement had taken place. Another appearance presented itself, which he had particularly noticed, but which he had not seen described in any works on pathology; that is, upon lifting up the *pia mater* from the surface of the convolutions of the brain, at the seat of the fracture, he found that a thin scale or layer of the cineritious matter could easily be lifted up along with the membrane; and on minutely inspecting the surface from which this layer had been detached, it presented a smooth and even appearance. To proceed with the account of the dissection: not feeling satisfied that the paralysis of the lower extremities could be the result of the disease found in the brain, especially considering that all the superior parts of the body retained their functions properly, he next examined the spinal marrow with care. It was found that this part presented a healthy appearance, except about a hand's breadth above the commencement of the *cauda equina*; here, upon one of the roots of the nerves, a small hard body, like a ganglion, was discovered, and in close connection with this gangliiform growth, a dense

body, like a fibrinous clot, and of the size of a bean, pressing upon the anterior column of the spinal cord, was found.

Mr. Shaw observed, that the remarks made by Dr. Williams were interesting, as they corresponded so exactly with observations made on a previous evening, when tumors of a large growth, compressing the substance of the brain, were exhibited before the society. He had brought, for the inspection of the members, a preparation which, he considered, showed, in a very remarkable manner, how great a change may be produced in a part of the brain, distinguished above all others for its importance in regulating the vital actions of the frame, and that part, notwithstanding the change, still retaining its functions. There is no portion of the central organs of the nervous system, upon which all the actions important for preserving life so directly and immediately depend, as the medulla oblongata, or that part where the spinal marrow is united to the columns prolonged from the brain; that is, at the foramen magnum, and arches of the atlas and dentata, the two first vertebræ of the neck. Here, if we wish to destroy life instantaneously in an animal, we introduce the knife, and all motion is at once arrested; the animal dying without a struggle, or even a heave of the chest. In this preparation it may be seen what a surprising change has been produced in the relative position to each other, of the occipital bone and the superior vertebræ of the neck, which surround and protect the part of the nervous system here referred to. Anchylosis has taken place between the articulating surfaces of the occipital bone and the atlas and dentata respectively, and, besides that, the bones have been displaced, previous to their union, in such a manner, that the greatest degree of distortion has been the consequence. The spinal canal has consequently been completely altered in its form, so that in place of its easily admitting the points of two or three fingers at its commencement, which would have marked its natural condition, it is with difficulty that a common pencil-case can be passed through it in any part.

He could not communicate many particulars regarding the patient from whom this specimen was taken; yet those with which he was acquainted were sufficient to show, that the man had survived the occurrence of the changes alluded to for some time. The preparation was obtained, some years ago, from a man, who had been picked up in one of the streets in the neighbourhood, in the middle of the night, in a state of insensibility, and who was brought by policemen to the Middlesex Hospital, no one being able to give an account of the accident. He died soon after his ad-

mission. Upon examining the brain, a fracture was discovered at the base of the skull, surrounding the foramen magnum, at some little distance from its margin, and presenting several angular points in the course of the fissure, some of which points had pierced the base of the brain. From the firm, consolidated appearance of the anchylosis, and the general aspect of the preserved bones, it is manifest that the disease which gave rise to the displacement must have been long completely cured; and it is to be presumed, from the circumstances in which the patient was found before his death, that he had the power of moving about without assistance.

Mr. E. Wilson stated, in reference to the observations by Dr. Williams, as to a thin layer of the cineritious substance of the brain being easily separable, in some cases, from that beneath it, that on making a post-mortem examination recently at Hanwell, of a patient who died insane, he had made a similar observation; and in drawing the attention of Dr. Conolly, the physician of the establishment, to the fact, that gentleman had stated that it was an appearance which he had seen in several patients, the subjects of insanity.

Dr. Hodgkin observed, that the appearance referred to had not escaped his notice; and he believed it had been described by authors. He related some particulars of a case in which a tumor of large dimensions was found imbedded in the substance of the brain.

Fibrinous clot in the arch of the Aorta.

Dr. Clendinning, at the close of the meeting, begged to exhibit a specimen, in which a clot of blood was seen plugging the termination of the arch of the aorta. He introduced the specimen chiefly for the purpose of stating, that in the interior of the fibrinous accumulation, a fluid, possessing all the common appearances of pus, had been observed occupying a distinct cavity.

Mr. Gulliver observed, that the fluid resembling pus, referred to by Dr. Clendinning, was altogether of a different nature from pus; both chemically and microscopically this difference could be established. The fluid in question has a greater tendency than pus to submit to the putrefactive process, and does not form the same compounds with alkalis which pus so readily forms. Again, examined under the microscope, it is seen to contain numerous minute granules, not perceived in pus, and only a tenth of the size of the pus globules. When put between thin plates of glass, it does not give rise to the iridescence displayed by pus in similar circumstances. The importance of this distinction, in re-

ference to theories at present much in vogue, concerning the supposed effects of absorption of pus, or the circulation of pus in the blood, he illustrated by several interesting observations which he had recently made.

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To the Editor of the Medical Gazette.

SIR,

IN your report of the last Pathological Meeting of the Medical and Chirurgical Society, you have omitted to state—what I mentioned at the time—that the three cases which I read an account of, occurred in the practice of Mr. R. F. King, of Whitehaven, who had transmitted them to the President to be laid before the society.

I am, sir,

Your obedient servant,

CHARLES HAWKINS.

Great Ryder Street,
May 11th, 1840.

ASSOCIATION OF PHYSICIANS, DUBLIN.

May 4th, 1840.

DR. HUDSON in the Chair.

Murder by Drowning.

THE secretary, Dr. Thomas Brady, said he wished to lay before the association an account of a trial which had taken place at the late assizes of Gloucester, and which presented some interesting features in a medico-legal point of view. It was the case of a woman convicted of the murder of her infant child by drowning it; upon circumstantial evidence, of which the medical proofs formed the most important link in the chain. An account of the trial had appeared in the newspapers; but in it the testimony of the medical witness was entirely misrepresented—indeed, it was this misrepresentation that had drawn his attention to the case. The following, from the London Morning Herald, April 8th, gives the general facts with sufficient accuracy:—

“Celia, the wife of John Tippins, was charged with the wilful murder of her male child, aged five weeks, by drowning it.

“It appeared that the prisoner had left Hereford on foot, at the end of October, to walk to Bristol, to join her husband, whom she stated to be a painter and stenciller; and that, on the afternoon of Saturday, the 2d of November, she arrived at the White Lion, at Cambridge, in Gloucestershire, which is twenty-three miles from Bristol, the child being then with her; and that at six o'clock on the same evening she arrived at a lodging-house at Newport, in

Gloucestershire, which is five miles nearer Bristol, she then having no child with her. It further appeared, that at nine o'clock on the morning of Sunday, the 3d of November, the body of a child, which had no clothes on, except one sock, was found in a water-course which runs under the turnpike road from Cambridge to Newport, at about a mile from the former place. The body was examined by Mr. Warner, a surgeon, residing at Dursley, on the Monday, who then gave it as his opinion (without dissection) that the child died from drowning, and afterwards on Wednesday examined it, but found no traces of disease about it; but from finding that the mouth and lungs were filled with frothy mucus, and that the lungs bled freely on being wounded, he gave it as his opinion that the child had died of drowning. It was further proved, that, on the following Tuesday, the prisoner was apprehended at her husband's house in Bristol, where a bundle of child's clothes, very wet, was found; but it was also proved, that when the prisoner was taken to Cambridge, at the time of the inquest, she was asked if the child was her's, and she said it was; and that on Mrs. Ludlow, the landlady of the White Lion, asking her how she came to do it, she said she did not know; and on Mrs. Ludlow saying, ‘I suppose you would have given the world to have the child alive again,’ she replied, ‘I would.’ It further appeared that the prisoner had registered the birth of this child with one of the registrars of births at Bristol, as the child of herself and Thomas Lee.

“Mr. Godson cross-examined the surgeon at great length, who said, if a child were brought to him in a room, without a word being said that it was drowned, that he could, from external appearances, say whether it was drowned or not. He added, that almost all the symptoms which he observed were the same as if the child had died from convulsions. He also added, that, according to Dr. Beck, the sign of drowning by an appearance of the same fluid as that in which the body was found was not one of the best *criteria* whereby to form judgment.”

To this report it is only necessary to add, that the child was the fruit of an adulterous intercourse with Lec, in whose house, in Hereford, she had been employed as wet-nurse; that her husband had consented to receive her on condition that the child was supported elsewhere; that she had been to Hereford to try and induce Lee to provide for it—had been brutally spurned by him from his door, and was returning on foot and in great distress with the child to Bristol.

On reading the above report, he, Dr. Brady, wrote to the medical witness, Mr.

Warner, expressing his conviction that his opinions, as to the signs of death from drowning, must be greatly misrepresented in the *Herald*, and requesting to know upon what signs in this case he had relied as proofs that the child had been drowned. That gentleman has politely favoured him with a very full communication on the subject, from which he was able to present to the association an accurate account of the appearances in the dead body upon which he founded his opinion. He never asserted as was falsely reported in the *Herald*, that he could determine whether a person had died of drowning or not from an external examination of the body. On the contrary, he distinctly stated that this was impossible. When he first saw the body, November 4th, it presented the following appearance:—"The skin was remarkably pale; there were wet leaves and weeds in the hollows, as the arm-pits, groins, &c.; the face was considerably swollen; the tongue forced to the front part of the mouth, rendering the lips and parts thereabout prominent, amounting to distortion. There were no marks whatever of external violence—no wasting of the body. On the contrary, it appeared a fine strong male child." The autopsy did not take place till the 6th. "The swelling of the face had completely subsided, and the face bore now a natural appearance. In the abdomen the organs were found quite healthy; the stomach contained about two ounces of fluid of the appearance of milk partly converted into chyle; he could not say whether there was water mixed with it. On opening the chest, the thymus gland was found of considerable size, but apparently not diseased; the lungs of a natural colour, in a state of partial inspiration, and bled very freely on being cut into. The air-cells contained some frothy mucus, as did also the extremities of the bronchial tubes. The blood was remarkably fluid."

From these signs taken collectively, and from the absence of any appearance in the dead body to indicate natural death, Mr. Warner concluded the child had been drowned.

The woman was found guilty, and sentenced to death, but the punishment has been commuted to transportation for life.

Concurrence of Empyema and Phlegmasia dolens.

Dr. Law detailed a case of pleuro-pneumonia of the right side, in a young woman, aged 22. The symptoms were very urgent. The treatment consisted in general and local bleeding, and the exhibition of mercury. Four and twenty grains of calomel produced salivation. The case was progressing towards recovery, when the patient got up and exposed herself to cold; in

consequence of which she was seized with sharp lancinating pain in the left side. Leeches, largely applied, removed the pain; but, on examination, it was found that effusion had taken place into the cavity of the pleura. A blister was applied to the side, and, the effects of the mercury which she had already taken having passed away, it was directed to be dressed with mercurial ointment. She was ordered, besides, *Pil. hydrargyri c. ipecacuanhâ*. This treatment having been continued for a few days, the pleuritic effusion disappeared. She had now a profuse expectoration of whitish frothy mucus, in fact bronchorrœa, and, in the postero-inferior left lung, there was a large loose muco-crepitating râle, while the respiration elsewhere was quite natural. Pills composed of sulphate of zinc and opium, and inhalation of hot water and vinegar, were ordered, with the view of checking the profuse expectoration, and succeeded in doing so to a certain extent. It, however, soon became as abundant as ever, and began to emit a peculiar sickly smell, which, after a short time, became fetid, but not so decidedly so as to make it certain that the fœtor depended on gangrene of the lung. About this time the patient began to complain of pain in the calf of the left leg, which, to the eye, was neither red nor swollen. A stimulating liniment relieved it. The fœtor, not only of the expectoration (which was of a greenish purulent character), but also of the breath, was now very marked. In the postero-inferior left side, there was dulness on percussion, and there was to be heard a large mucous râle, almost amounting to gargouillement. She was ordered a mucilaginous mixture, to which was added a drachm of the solution of the chloride of sodium, with a view of correcting the fœtor of the expectoration and of the breath. On the 24th of January, when she had been a month in hospital, she was seized at night with a severe sharp pain in the left thigh, which deprived her of all power of motion of the limb. The next morning the entire leg and thigh were very much swollen, of a dark pale colour, and marked with blue veins. The limb, when pressed superficially, felt elastic, and did not pit; but when stronger pressure was made, it conveyed the sensation as if the deeper-seated parts had not the same density as the superficial. Her chief pain she referred to the groin. The inguinal glands were not unusually developed. The pulse was 140 in the minute, sharp, and hard. Thirty leeches were directed to be applied to the groin, the limb to be stuped, and pills of two grains of calomel and half a grain of opium to be taken every third hour. The leeches relieved the pain in the groin, but she still complained of considerable soreness

when pressure was made along the course of the femoral and popliteal vessels. The temperature of the limb was much greater than natural; pulse 130, full, but compressible; the abdomen was tympanitic; thirst. Forty leeches were directed to be applied to the most painful parts of the limb; stupor afterwards; and the pills of calomel and opium to be continued. She was very weak after the application of the leeches, and her stomach became very irritable; a little wine, however, revived her. There was no pain now in pressing the limb any where; the swelling was still very considerable, but it did not retain its uniform elasticity, being cedematous in parts; it continued to exhibit its white glazed appearance: the pulse was now 126 in the minute, short, and rather hard; the systole of the ventricle short, rapid, and attended with impulse. The cough was now lost sight of, and not because the affection of the limb had caused it to be overlooked, but because that since the limb had become affected, it had really become so much less that she felt very little inconvenience from it. She continued to take the pills of calomel and opium, and had now taken forty-six grains of calomel, without the gums being even soft or swollen.

The report on the 30th was,—pulse 120; heart's action sharp and quick (irritable); she had slight muttering delirium during the night; cough has quite disappeared; pills of calomel and opium directed to be continued, as also porter and beef-tea which she had been taking.

31st.—Swelling of limb much diminished; cough has returned; sputa tough, viscid, green, purulent; percussion yields a clear sound in both sides of the chest anteriorly, and in all posterior right, dull alone in inferior left; then there is a large mucous rale; abdomen tympanitic; heart's action more feeble. She feels extremely weak; pills to be continued. Let her have arrow-root, and four ounces of wine.

Feb. 2nd.—Pulse 120, small, and rather sharp; heart's action accompanied with considerable impulse, and heard extending through the chest; expectoration very fetid; the swelling of limb greatly lessened, and it has quite lost its shining glazed appearance. There is a peculiar yellowish pallidness of the face, with a glossiness of the eye like what is observed in puerperal fever. She has now taken 96 grains of calomel without any effect on the gums. The following pills were substituted:—

R. Chlorid. Calcii, gr. duostem; Extract. Opii agnosi, Pulv. Ipecacuanhæ, aa. gr. tria. Fiant, pilulæ quatuor, una tertiis horis sumenda.

She was ordered eight ounces of wine, and beef-tea.

3rd.—Cough more distressing, and sputa more fetid. She has diarrhœa. Pills of chloride of calcium to be discontinued, and to have instead five grains of Dover's powder every third hour.

4th.—Diarrhœa continues. Following mixture ordered.

R. Mist. Cretæ, ℥vi. Confect. Opii, Confect. Aromatic. aa. ʒj. Sa. ʒj. 3tiis. horis.

Should diarrhœa continue, the following enema to be administered:—

R. Decoct. Amyli, ℥vj.; Tinct. Opii, gtts. xx. Plumbi Acetat. gr. xii. Twelve ounces of wine.

Diarrhœa has ceased.

7th.—Pulse 140; cough troublesome; green, fetid, purulent sputa. She has had a good deal of delirium during the night. Stomach irritable, and bowels again relaxed; exhaustion very great.

Enema e Decoct. Amyli, Tinct. Opii, et Plumbi Acetat. to be repeated. Let her have chicken broth, and twelve ounces of wine.

Her condition now was extremely discouraging; her weakness was extreme; the least motion hurried her breathing. While things were in this state her mother came to her from Scotland; then a visible amendment took place in her; she begged of her mother to bring her back with her to Scotland, to which Dr. Law pretended that he would consent at the end of a week, scarcely expecting that she would be then alive. The rapid improvement which took place in her when she heard that she was to return home (for Scotland was her country), was most striking. The prospect seemed to communicate strength to her; and at the end of the week, she was carried from her bed to the Glasgow steamer, and thus conveyed to Scotland. Her recovery was slow, but complete.

The features of the case which appeared to Dr. Law to entitle it to notice were,—1st, the pulmonary affection in that stage of it when the evidence of effusion into the side having ceased, the profuse fetid expectoration succeeded. Dr. Law adverted to an interesting paper, by Dr. Green, in the last number of the Dublin Medical Journal, on Empyema. In it Dr. Green observes, how frequently a copious purulent expectoration, independent of a fistulous communication between a bronchial tube and the pleural cavity, or of a tubercular excavation, or of abscess, the effect of pneumonia, is present in empyema. He adopts a suggestion of Dr. Hutton's to explain it; that it is an effort of nature to relieve itself of the effusion, as if by a vicarious secretion. Dr. Law quite agreed with Dr. Green's explanation as applicable to some

cases, although not to all; for that he had met with three cases of unequivocal empyema, in each of which the patient had a distinct sensation of something giving way in the side, and immediately threw up a large quantity of green purulent matter; the breathing was at once relieved, and the side lost its dilated appearance. Dr. Law did not think it possible that Dr. Green's explanation could apply to such cases, although he confessed the difficulty of supposing, that the collection of matter, like an abscess, should make its way into the lung, and thus be expectorated, without the phenomena of pneumothorax succeeding. Yet, in the face of this difficulty, he preferred this explanation, which he conceived derived some countenance from what occurs when abscesses in the iliac fossa make their way into the intestine, there being no escape of fæces from the intestine. Dr. Law confessed that the analogy was not very exact.

The second interesting feature of the case was, the complication of phlegmasia dolens, which was the second instance of the kind which Dr. Law had met with; each proving, that this modification of disease is not necessarily connected with the puerperal state: for while the young woman, the subject of the present case, had never borne children, the subject of the other instance was a young man.

The third point of interest connected with the case, was its illustrating an observation made by Dr. Law, in a number of the Dublin Medical Journal, when remarking on the exhibition of mercury, how some diseases had the effect of rendering the system signally insensible to the operation of this medicine; for while, in the early stage of the disease, 24 grains of calomel produced salivation, when the phlegmasia dolens came on, and its use was again resorted to, 96 grains did not make the least impression. Dr. Law regarded the constitutional symptoms, exhibited at this stage of the disease, as exactly those which he had observed in almost all those diseases which he found to resist the use of mercury, such as puerperal fever, different modifications of constitutional irritation, &c. In the case in question, the varying susceptibility of the effects of the mercury could alone be attributed to the varying conditions of the system, the effects of disease.

The last point to which Dr. Law adverted was the extraordinary influence which the mind exercised over the body: "Posunt qui non posse videntur." Dr. Law noticed how the cough seemed to be suspended during the affection of the limb, and returned according as this affection gave way.

Dr. Aquila Smith gave an account of a case of pneumonia, in which delirium ap-

peared at the very commencement of the attack. The patient was a man of *temperate* habits. The disease yielded to an active mercurial treatment.

BOOKS RECEIVED FOR REVIEW.

On the Improvement and Preservation of the Female Figure: with a new Mode of Treatment of Lateral Curvature of the Spine. By G. B. Childs, Esq. M.R.C.S. &c. London, 1840. 12mo. pp. 188, with six Lithographic Plates.

On the Nature and Structural Characteristics of Cancer, and of those Morbid Growths which may be confounded with it. By J. Müller, M.D. Professor of Anatomy and Physiology in the University of Berlin, &c. &c. &c. Translated from the German, with Notes, by Charles West, M.D. Graduate in Medicine of the University of Berlin. Illustrated with numerous Steel Plates and Wood Engravings.

Hippopathology: a Systematic Treatise on the Disorders and Lamenesses of the Horse; with their Modern and most approved Methods of Cure; embracing the Doctrines of the English and French Veterinary Schools; the Opinions of the late Professor Coleman, Director Girard, Hurtrel d'Arboval, and other British and Foreign Veterinarians. By Wm. Percivall, M.R.C.S. Licentiate of the Company of Apothecaries, &c. &c. &c.

A Practical Treatise on the Diseases of the Eye, and their Treatment, Medically, Topically, and by Operation. By Frederick Tyrrell, Senior Surgeon to the Royal London Ophthalmic Hospital, &c. &c. 2 vols. 8vo.

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, May 19, 1840.

Abscess	1	Whooping Cough . . .	5
Age and Debility . . .	11	Inflammation	7
Apoplexy	1	Bowels & Stomach . . .	5
Asthma	1	Lungs and Pleura . . .	2
Childbirth	1	Insanity	1
Consumption	20	Mortification	1
Convulsions	16	Paralysis	1
Dentition	2	Small-pox	6
Dropsy	1	Sore Throat & Quinsy . .	1
Dropsy in the Brain . .	2	Stricture	1
Dropsy in the Chest . .	2	Unknown Causes . . .	84
Fever	1		
Fever, Scarlet	4	Casualties	1
Heart, diseased	1		

Decrease of Burials, as compared with } 19
the preceding week }

METEOROLOGICAL JOURNAL.

May.	THERMOMETER.	BAROMETER.
Wednesday 13	from 48 to 63	29.62 to 29.63
Thursday . 14	49 67	29.63 29.55
Friday . . 15	51 56	29.83 Stat.
Saturday . 16	50 60	29.34 Stat.
Sunday . . 17	46 61	29.32 29.42
Monday . . 18	45 61	29.50 29.84
Tuesday . . 19	45 55	29.94 30.07

Prevailing wind, S. and S.W.

Rain fallen, 1 inch and '11 of an inch.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, MAY 29, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

FRACTURES, *continued.*

The Sternum, Ribs, Costal Cartilages, Ossa Innominata—Scapula, its body, spine, inferior angle—Coracoid and Acromion processes—Neck—Clavicle—Humerus—Forearm—Radius.

THE STERNUM.

A FRACTURE of the sternum may be transverse or longitudinal, simple or compound: it is almost always produced by direct violence, a blow or a fall. In a man of 28, David saw the superior and inferior part separated from the middle, by a fall on the back. Chaussier saw a case, in which fracture was produced by the action of the sterno-mastoid and recti muscles, in the efforts made by a woman during parturition.

When the fracture is transverse there is usually displacement; the inferior fragment is pushed, as it were, a little in front of the superior. If there be comminution, the fragments frequently are driven into the anterior mediastinum. Direct fracture cannot be produced without a severe shock, and the thoracic viscera are generally injured; the displacements may excite inflammatory action, abscess of the mediastinum, and caries or necrosis of the sternum. Cases have occurred in which the displacement of fragments has been so great as to lacerate the heart.

Simple fracture of the sternum is not a dangerous accident: but, unfortunately, the chances of complication are so great, that it is often mortal. Ill reduced, Petit saw a case in which it was followed by dry cough, palpitations, and other inconveniences to the thoracic functions.

Treatment.—The treatment of cases of simple fracture is very simple. The patient lies on his back; the trunk is flexed, by placing pillows under the shoulders and the pelvis; the thorax may be surrounded by a belt, to induce diaphragmatic respiration, and to keep the parietes as quiet as possible. If either fragment project, moderate attempts may be made to reduce it, but no violence should be employed. If there be great displacement, the patient must be placed in such a position as will best relax the attached muscles, and facilitate the replacing of the fragments. Ordinary means failing, it has been recommended to place under the patient's back some cylindrical body, such as a barrel; "in this position, the recti and sterno-mastoid muscles would so drag upon the two extremities of the sternum, as to disengage the fragments." These failing, elevators might be used, or a fixed portion of the bone might be trepanned, so as to allow of the application of the necessary force. It is, of course, advisable, to reduce the fragments as nearly as possible. Should inflammatory action be impending or developed, active antiphlogistic means must be employed. If suppuration should take place, the means of procuring the evacuation of the pus were indicated when speaking of abscess.

RIBS.

In old people fracture of the ribs often happens, and usually more than one suffers at the same time. The middle are more frequently affected than the superior ribs, which are protected by the shoulder and the clavicle; the two inferior are so move-

able that they rarely suffer. The fracture commonly affects the middle part of the rib; but it may affect two points, so as constitute three fragments. A specimen was shewn at the Society of the School of Medicine at Paris, some years ago, where, in a woman of 79, the last four left ribs were each fractured at two points. Sometimes there is much, at others little displacement. It may result from direct injury, may succeed to an accident, by which a person is squeezed between a cart-wheel and a wall, for instance. In the *Med. Chir. Review*, Oct. 1833, is a case where the fracture happened during a fit of conghing. It was observed by Dr. Graves; the patient was a woman of 47, in good health, and presenting no indication of fragility. In the *MED. GAZETTE*, vol. 16th, are two similar cases by Mr. Naukivell.

Fractured ribs may be complicated, by injury to the pleura or the lung; by emphysema, pneumo-thorax, wound of intercostal artery, or laceration of the diaphragm. If there be no displacement, this accident is not very easily distinguished, especially in stout people. The hand must be placed either on the point where pain is felt, or that where the injury has been received; the patient is directed to cough, the ribs are moved, and crepitation may be felt. We may also be able to feel inequality, or a giving way at the point, if the finger is passed firmly along the rib. If you have found one fractured, do not search for more; the treatment is the same whether there be one or four, and you may spare your patient much unnecessary pain. Usually there is oppression, fever, painful cough, sometimes bloody expectoration. Emphysema is not an uncommon complication; it supposes destruction of the pleura, and of the surface of the lung.

It is evident that the danger of these fractures depends upon the complication. A fracture is more dangerous in an old than a middle-aged person; so is it in the superior than the inferior ribs. If the fragments are forced inwards, the case is more serious than the opposite condition.

Treatment.—Uncomplicated, the treatment is simple; the object is to preserve the walls of the chest as free from motion as possible. If there be no severe external injury, this may be done by surrounding the chest with a broad flannel or linen roller, or, what is better, a rib belt; in either case let it be so tightened as to prevent, as far as possible, transverse or upward movement of the ribs. If fragments be depressed, it has been recommended to apply thick compresses to the anterior and posterior extremities of the fractured rib, and to press strongly upon them by means of a belt or bandage, in the hope of reducing the displacement. I have never seen much good

derived from the plan; I have known evil to follow too much meddling. If there be symptoms of wounded lung, or inflammation of that organ, very large and repeated general and local bleedings are necessary. We must not wait the development of peripneumonia, but use every means to prevent it. Laxatives and antimonials must be administered; and if, after the energetic use of these agents, a painful and frequent cough continues, we may venture to let the patient sip some opiate, for the relief which is often thus obtained will more than counterbalance any injurious effect of the opium.

OSSA INNOMINATA.

Fracture of the bones of the pelvis is comparatively rare. This we might naturally expect from their situation and their solidity. To occasion fracture, the injury must be very severe, and directly applied; and too generally the viscera contained in the pelvis suffer. The *ilium* is, I believe, never fractured by indirect causes. I saw a case the other day, a child, in whom the crest was completely detached, being then in the condition of an epiphysis: but fractures of the crest, and of the middle portion of the ilium, are not usually accompanied by much displacement. Still there is a case mentioned by Sanson, where a square piece of the ilium, of the size of four fingers, was detached, and dragged up near to the thorax. When the anterior superior spine alone is detached, it has been found dragged downwards and forwards, by the sartorius and tensor vaginæ femoris. It is not always easy to ascertain the kind of injury which has been sustained, yet, if we relax the muscles, we shall usually be able to distinguish mobility, if not crepitation. Dupuytren thought that fracture of the left ilium always produced constipation.

Any portion of the *pubes* may be fractured, either by a fall from a height, or by being jammed between two unyielding bodies, or by a wheel passing over the trunk. Sir A. Cooper mentions cases of this kind, where there was a good deal of displacement; the detached fragments may compress or destroy the urethra, causing retention of urine, or urinary abscess. Desault extracted a fragment which had penetrated the urethra in a similar case, and for some years occasioned much suffering. Maret successfully removed the greater portion of the pubis, which was detached and displaced so as to compress the urethra and the vagina. The situation of the pubis is sufficiently superficial to render the diagnosis of such injuries comparatively easy.

Though rare, several cases of fracture of the *tuberosity of the ischium* are on record. In some of these cases there was very little displacement; in others, it was drawn down

by the muscles of the thigh, and no difficulty appears to have been experienced in detecting the kind of injury.

The fracture may implicate the *acetabulum*. Sir A. Cooper, Sanson, and others, have seen the three bones separated at their junction in this cavity. The fundus may also be driven in. Sir A. Cooper, Gama, and others, have seen the head of the femur forced through the cotyloid cavity into the pelvis, from a fall on the great trochanter. This species of accident is distinguished, according to Cooper, from luxation, by the mobility of the thigh, and by crepitation.

Free from all complication, these injuries are not very dangerous; but, unfortunately, they are generally accompanied by great contusion, ecchymosis, damage to pelvic viscera, or concussion of the spine; either of which materially increases the danger.

Treatment.—The treatment, of course, varies with the seat of the injury. The mode of reduction varies with the case. If we relax the muscles which tend to displace fragments, reduction is comparatively easy. Supposing the iliac spine, or other portion of the ilium, to be detached, the chest will be inclined toward the fractured side; to elude the action of the abdominal muscles, the thigh must be flexed, in the sense of abduction, or adduction, according as the fragment is drawn inwards or outwards. If this plan should not succeed, the displaced fragment may be reduced, by making tense the muscles of the affected side, by inclining the trunk to the healthy side. If the anterior superior spine be detached, the thigh must be flexed so as to relax the sartorius and tensor vaginæ femoris. During the whole treatment, the patient's position should be such as is proper for relaxing those muscles which may occasion displacement. The position which usually answers best is to lie on the back, to keep the thighs together, and to flex them upon the pelvis; for this purpose, a bandage should be placed around the knee, and a thick pillow in the ham. The same situation answers best in fracture of the pubis. In women we may facilitate reduction, by passing the finger into the vagina.

If the tuberosity of the ischium be detached, the patient must lie on the sound side, the thigh of the injured side extended, the leg flexed, and the fragment sustained by compresses and bandages.

If the fracture affect the cotyloid cavity, reduction is not always possible. If the limb be rotated inwards or outwards this may be remedied. All that can be done is to attend to the position of the limb: the most convenient is semi-flexion, upon a double-inclined plane; we shall thus prevent rotation, and relax the muscles. What-

ever be the fracture, perfect rest is essential. If there be infiltration of urine, free incisions will be necessary, and any inflammatory accidents which may supervene must be energetically treated by antiphlogistics. There is one remark which applies equally here, and to all the bones of the trunk—it is, that there is nothing more difficult than to induce the patient to preserve the necessary position.

SCAPULA.

This bone is so very moveable, and so well covered, that it is unfrequently fractured: there are, however, certain parts of it more projecting and less protected than others, which now and then suffer. Of these points the *acromion* is most frequently affected, commonly in consequence of a fall upon the shoulder; next comes the inferior angle, the spine, the coracoid process, and the neck, and they are almost always accompanied by considerable contusion, which is sometimes more serious even than the fracture itself.

When the *acromion* is the seat of fracture, the head is drawn towards the affected side, the arm remains immoveable at the side, and the patient feels a pain at the part, which is increased by every attempt to raise the arm: if, during these efforts, the hand be placed upon the *acromion*, we feel its summit giving way, and a crepitation produced. If left to itself, it will get well, but the fragment retains its vicious position, and the motion of the arm is constrained. Sometimes it is united by bone, but often by ligamentous matter, so as to cause an artificial joint.

Treatment.—The treatment of fracture of the *acromion* consists in raising the fragment to its proper height; this is done by raising the head of the humerus, and maintaining it in that position close to the side, and relaxing, as far as possible, the deltoid. If the patient have a narrow chest and prominent shoulder, it may be proper to place a compress in the axilla, so that the humerus shall be parallel to the axis of the body, but Sir A. Cooper doubts the necessity for the axillary pad.

If there be fracture of the *spine of the scapula*, its superficial situation frees the diagnosis from difficulty; the fragments are moveable, a pain is felt at the part during the action of the deltoid in raising the arm. It is usually accompanied by more contusion than the fracture of the *acromion*, but the reduction is easily accomplished, though the maintenance of exact coaptation is by no means easy: when reduced, small narrow splints of milled board should be placed above and below, but parallel to the spine, and fixed by a figure of eight bandage.

Simple fracture of the *inferior angle* is

usually easily detected, but it may be complicated. The producing cause, the local pain, the displacement of the inferior fragment in a direction varying with the muscle attached to it, whether it be the serratus alone or the serratus teres and latissimus, the crepitation which can always be produced, are signs which are sufficient to prevent any mistake in diagnosis. If the fracture be vertical, it is less easily detected, because there is no great displacement. In the treatment of transverse fracture, which above the spine is rare, we must seek to act on the inferior fragment, to bring it, as near as may be, in contact with the superior; this is best attained by bringing the elbow forward, and, if the patient can bear the inconvenience, passing the hand over the other shoulder and fixing it there. If it cannot be borne there is one satisfaction—the cure will still proceed, though with a little deformity, provided the parts be kept at rest.

The *coracoid process* is so well covered, and so well protected, that it is rarely fractured. The only case I know, verified by dissection, is that of Mr. South. When it has suffered, if there be no great contusion, the application of the finger upon the point should be sufficient to detect it; but, unfortunately, as it is not ruptured by muscular action, the violence is great, and the tumefaction so considerable as to defeat the attempt to ascertain the injury in this way. If the process be fairly detached, the action of the lesser pectoral, the biceps, and the coraco-brachialis, would tend to depress it, but this depression would be very considerable, first, because their fibres stretch along nearly to its base, and, secondly, because the coraco-acromion and coraco-clavicular ligaments would tend to maintain it *in situ*.

I know no other means of treatment applicable to these fractures than relaxing, as far as possible, the muscles which are attached to the process. The forearm should be semi-flexed and brought to the side, and secured there by bandage.

The *neck of the scapula* may be fractured at its base, but the accident is of very rare occurrence, and we can readily conceive the displacement which may occur in that case. The weight of the arm, and the long head of the biceps, will tend to drag down the glenoid fragment, and the teres, latissimus dorsi, and the lesser pectoral, would increase the displacement towards the axilla. However, the injury done to the soft parts in the production of this fracture is commonly so great, that much difficulty will be experienced in ascertaining the amount and kind of injury.

The symptoms of this fracture may impose upon a careless observer, and induce

him to suspect luxation of the humerus. In one and the other there is a hollow at the shoulder, the axis of the arm is oblique downwards and outwards, the elbow removed from the side; still there are differential signs which render mistake difficult. In fracture, reduction is easier than in luxation, but the displacement recurs as soon as the support is removed; this does not happen in luxation. If, after reduction, we grasp the shoulder, applying the index finger upon the coracoid process, which adheres to the glenoid fragment, and rotate the limb, crepitation will be readily perceived. The fracture causes a stiffness at the joint, which remains very long. To reduce it, we disengage the glenoid fragment from the axillary fossa by pushing the arm upwards and outwards; a pad must be placed in the axilla, the arm must be fixed across the chest, as in fractured clavicle, and the apparatus, according to Sir A. Cooper, should not be removed before the tenth or twelfth week in the adult.

CLAVICLE.

The situation, form, and texture of the clavicle, render it very liable to fracture, and it much more frequently happens from indirect than direct violence, from falls upon the shoulder or the elbow; under these circumstances the clavicle is pressed between two points, the shoulder and the sternum; its curvatures increase until its texture can no longer resist, and fracture is the usual consequence. Both clavicles may be fractured at the same time. A strong carman was squeezed between a high wheel and a wall, when this accident happened; he was cured on the thirty-second day. Another case of fracture of both clavicles is mentioned by Seutin.

Fracture by direct violence is very easily produced, particularly if the violence be directed upon a point near the middle of the bone, because both ends are supported, and the centre will give way. Some time ago I saw a case in which the fracture was produced by a blow of the sails of a wind-mill.

Although in a great number of cases the fracture is complete, there being two distinct fragments, it may be incomplete. Sanson describes the case of a woman, in whom he conceived the fracture to be incomplete; the bone, at its middle, formed a projecting angle, plainly discernible, yet the patient could lift her hand to her head, and by no means could the slightest crepitation be discovered. Delpech mentions a similar case, but explains it by assuming the integrity of the periosteum. In those cases, as well as those numerous ones where the angle is very obtuse, without deformity, crepitation, or loss of power of raising

the arm, it is fair to assume that the fracture is incomplete; I am not, however, aware that any direct post-mortem sanction has yet been given to this opinion.

The clavicle may, as a consequence of violence, be fractured at any part; but as a consequence of indirect violence, the middle is the ordinary seat of the fracture, where, in fact, the bone is thinnest and most curved.

Symptoms.—It is important to determine what is the relation of the coraco-clavicular ligaments to the fracture, because this decides whether it is a fracture of the sternal or the scapular portion of the clavicle. Ribes maintains that if the costo-clavicular ligament is attached to the external portion, the fragments will not be displaced, neither by muscular action nor by the weight of the body; the internal fragment remaining immovable, whilst the external is relaxed by the costo-clavicular ligament. This opinion is certainly much too exclusive, and there is a case in proof of this where a dissection was made by Beclard. If it be fractured at its external extremity, between the acromio-clavicular articulation and the insertion of the coraco-clavicular ligament, the scapula is sustained and there is no displacement; if it happen within that ligament, the external fragment is almost always displaced, whilst the internal, drawn upwards by the cleido-mastoid muscle, downwards by the pectoralis major muscle, and the costo-clavicular ligament, does not change its situation; still a case occurred to Guérétin where the fracture was near the internal border of the coracoid process; there was a good deal of displacement; the external fragment, sustained by the coracoid process, was not displaced; the internal was drawn down by the deltoid and pectoralis major. There is on record an exceptional case, where the internal fragment was drawn up vertically, the cleido-mastoid muscle being spasmodically contracted. Generally the external fragment is depressed by the weight of the arm and the action of the deltoid; it is at the same time drawn forwards and inwards by the pectoralis major, so that it is placed under the internal fragment, which projects above it. The clavicle can then no longer retain the shoulder at its natural distance from the sternum, the arm is depressed, slightly rotated inwards, and the head and the trunk are inclined to the injured side. This attitude is so characteristic that many eminent surgeons believe that they can always, from that fact alone, determine the accident. The patient can no longer bring the hand to the head, because the humerus no longer finds in the clavicle a necessary point of support. Instead of bringing the hand to the head, he brings the

head to the hand. Still, when a patient is unable to execute this movement, you are not therefore to presume that there is fractured clavicle; nor when that ability exists, must you always presume there is no fracture. If the signs to which I have referred exist, you proceed to pass the finger along the bone, when an inequality will be detected; if at that time the arm be moved, pain and crepitation will be produced. If we raise the arm vertically, carrying it at the same time outwards, the fracture will be reduced, and the shoulder will resume its natural form and position. In very rare cases the external fragment has been known to pass above the internal; this was even observed by Hippocrates.

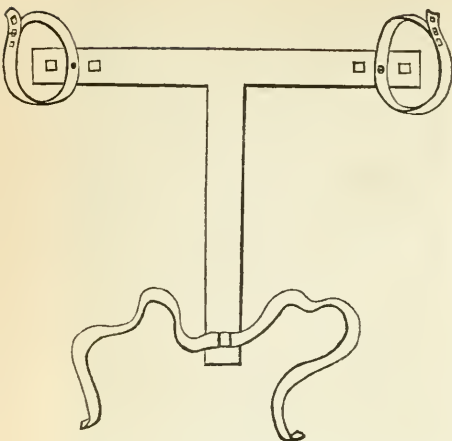
Diagnosis.—The diagnosis of this fracture is usually very easy; when there is no displacement it is more difficult: in the year 1787, at the Hôtel-Dieu, Desault three times saw this variety; if the scapular extremity be the part affected, the fragments having suffered no displacement, it is sometimes extremely difficult to ascertain the exact injury. We examine carefully the painful point, we feel near the acromion a slight depression, and this disappears if the shoulder be raised by pressing up the elbow.

Usually no danger attends fracture of the clavicle, unless there be some serious complication; yet the consequences of undetected simple fracture have been serious; abscess and necrosis have occurred. When it is a consequence of direct injury, there is always a certain quantity of contusion; the bone may be comminuted, and the vessels or nerves may be injured, and paralysis of the arm may follow. (*Med. Chir. Trans.* vol. vii. p. 175.) The bones may pass through the skin, but, except in military surgery, these are very unusual cases.

Treatment.—A fracture of the sternal extremity is usually easily reduced; it is merely necessary to press up the elbow, to raise the shoulder, pressing the arm a little outwards, to reduce it to its proper position; but though reduction is thus easy, maintaining reduction is any thing but easy, as may readily be supposed, when we look at the numberless apparatuses invented for the purpose. Formerly all that was deemed necessary was to keep back the shoulders, as is seen in this apparatus (fig. 1) of Heister's.

But carrying back the shoulders does not remedy the displacement, and the stellated bandage was resorted to. Upon this bandage many changes have been rung by inventors, but most of them are very small improvements on it. Desault made a lever of the humerus, for the purpose of extending the clavicle; this was accomplished by placing thick pads in the axilla, and

Fig. 1.



bringing the arm close to the side; and unquestionably a very important improvement this was. His plan, which, variously modified, is in common use in the present day, was to place a conical wedge in the axilla, its base directed upwards, and secured there by bandage; this being fixed, the arm was brought to the side, the elbow directed forward, so as to carry the shoulder outward and backward. The reduction being thus completed, the next point was to keep the fragments reduced; rollers, after passing around the chest, were brought down from the shoulder and carried round the elbow and arm, so as to fix them securely; then another roller was carried round, and fixed just below the axilla of the healthy side; directed from thence over the injured shoulder, and so continuing until a sufficient protection against displacement was had. To prevent slipping it is well to pass a needle and thread through the turns of the bandage. Still, however well applied, the drawback to this apparatus is, its getting loose; and his experience of that induced Boyer to invent his apparatus, which in principle does not differ from the former.

Mayor's apparatus, like Sir C. Bell's, is certainly more simple, and I think more effective. It consists of a gutter slung around the neck, and brought in front of the chest, but well inclined to the opposite side. In this the arm rests, and by its weight makes tense a strap by which it is supported; and this strap keeps down the clavicle.

Among the modern improvements in the apparatus, is the substitution of a small air cushion, for those formerly used in the axilla, to which two objections attached; they either gave way too much or were too unyielding.

Richter fills up the spaces around the clavicle with compresses, over which the ordinary bandages are placed. I am strongly of opinion that compresses, saturated with starch, or any other substance capable of consolidation, would be a desirable improvement, because, when reduction is completed, it would be exactly adapted to the part, and would be opposed to subsequent displacement: plaster of Paris would answer well for the purpose. Velpeau, after trying most of the apparatuses, has discarded them: he now places the hand of the affected side upon the shoulder of the healthy side, and fixes it there; but certainly, whatever merit it may have, it is a very uncomfortable position for the patient. Between the many apparatuses we have considered, and the catalogue might have been doubled, I have no hesitation in recommending that of Sir C. Bell and Mayor as the best, though no doubt the object may be attained by others; but what extent of deformity may result will depend much upon the skill and attention of the surgeon.

Yet though the variety and apparent completeness of many of the apparatus might naturally lead us to expect that fractured clavicle would be cured without deformity, it happens that such an occurrence is rare; usually there is a slight shortening and projection of the internal fragment, and no means at present known are capable of preventing this. It is true that the deformity is ultimately inconsiderable, and the shortening trifling; but still they are real, though they do not at last interfere with the extent or the precision of the motions of the arm: the consequence of that conviction is, that complicated apparatuses are in the present day to a certain extent exploded, and the means commonly employed are, a pad in the axilla, the arm fixed in the way I have already described, and a shoulder strap to keep down the fragments. The time necessary for consolidation is comparatively short. Some persons have maintained that calcareous matter is very slowly deposited in the callus, and advise that the apparatus should not be removed before the sixtieth day. Certainly general experience is opposed to this view of the case, since the apparatus is most frequently dispensed with by the end of the third week—sometimes sooner. The ancients thought consolidation was accomplished by the twelfth day; and the reason they gave for it was, that the texture of the clavicle was spongy. Whether the energetic action which presides over its development during the first months of intra-uterine life, and which causes it to be one of the first bones ossified, and to be for some time superior in length and bulk to the humerus, still continues to preside over

this bone, I cannot say. If so, is it for this cause that artificial joints are there so excessively rare, that it may admit of question whether a single case has been seen?

THE HUMERUS.

The humerus may be fractured at many points, at its middle portion, or its extremities. If the fracture be above the insertion of the latissimus dorsi, pectoralis major, and teres major, it is termed a fracture of the neck of the humerus; but this is surgical language; for the anatomical neck of the humerus is, as you know, a much more limited space. When it is below the insertion of these muscles, it is termed fracture of its body. A fracture may be transverse or oblique, simple or complicated—may be caused by direct or indirect violence. Muscular contraction alone may be sufficient to fracture this bone. A man, not many years ago, fractured the humerus in an attempt to twist

the wrist of his adversary. A woman fractured her humerus in a violent effort to grasp the wheel of a carriage when she found a foot-path giving way under her. A person has fractured the humerus in throwing a stone. The simple action of drawing on a glove served to fracture the humerus; but, in that case, there was no doubt caries (Fabricius Hildanus); a similar consequence has been produced by missing the object when hitting out (S. Cooper). Probably Fabricius' is not the only one of these cases in which the bones had undergone some organic changes. There is usually considerable displacement in fractures of the humerus, varying with the point injured, and it is very characteristic. If the middle part of the bone be affected below the insertion of the deltoid, and this is the most frequent seat of fracture of the humerus, the displacement is not great, because the brachialis, anticus, and triceps, are attached equally before and behind the two fragments (fig. 2). If it be

Fig. 3.

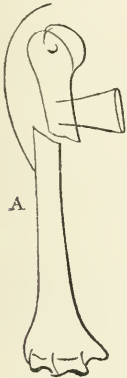


Fig. 2.

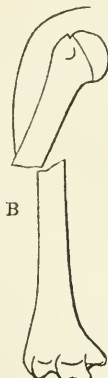
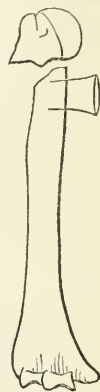
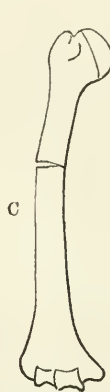


Fig. 4.



above the insertion of the deltoid, the inferior fragment is drawn upwards and outwards to the outside of the superior fragment, which is drawn downwards and inwards by the latissimus dorsi, pectoralis major, and teres major (fig. 3). If the fragment be near the inferior extremity of the bone, the extent of surface prevents any great displacement, though the inferior fragment may be drawn a little upwards and backwards by the action of the biceps. The weight of the arm, however, is opposed to great riding. Still if the arm be very muscular, the inferior fragment is forcibly raised by the biceps, brachialis, anticus, and triceps, and the arm is shortened.

We detect these fractures by pain at the affected part, by the inability to move the arm, by its change of form and direction, by the unnatural mobility of its middle

part, and by the crepitation, which is easily perceived.

Fracture of the humerus is ordinarily not a serious injury. If it be at the inferior extremity, and implicating the joint, it is of course more serious, because incurable ankylosis may be the consequence.

Treatment.—The reduction is usually easy: an assistant sustains the shoulder, whilst extension is made upon the lower fragment, or upon the semiflexed forearm; why you should choose the latter, I have already stated. The fracture being reduced, and the arm having resumed its proper angle and form, the external tuberosity of the humerus being found upon the same line, as the most projecting point of the shoulder, the forearm and hand are rolled to prevent the œdema so commonly

consequent upon those injuries. Many persons continue the roller along the arm with moderate firmness; others, fearing inconvenience from tumefaction, use a many-tailed bandage. Some persons now place four splints of pasteboard or wood; others are satisfied with two, laterally placed; others, and justly, with Amesbury's apparatus, or the starched bandage. Either apparatus may be made tolerably free from inconvenience. If the fracture be simple, it is not absolutely necessary that the patient should be confined to bed at all; in that case the arm is flexed and fixed in front of the chest; from time to time, with intervals of eight or ten days, you examine to ascertain whether there be any displacement, but it is not prudent to remove all support before the fifth or sixth week. If the fracture be complicated with wounds, the patient must keep his bed: in such cases Mayor and Sauter's apparatus will be found useful; it facilitates dressing, and irrigation, if necessary.

INFERIOR EXTREMITY OF HUMERUS.

When the inferior extremity of the humerus is fractured, the diagnosis is not always easy, because the inferior fragment is small, and the swelling about the joint is sometimes great. The triceps may draw the forearm upwards and backwards, carrying with it the inferior fragment, the superior being pushed forward. Goyraud and others have seen the inferior fragment fractured vertically; it has also been observed by Sir A. Cooper. The displacement of the inferior causes a displacement of the superior fragment; the olecranon projects backwards—sometimes considerably; the forearm is slightly flexed. In several cases mentioned by Cooper and Dupuytren, this injury has been mistaken for dislocation. If we bear in mind the following circumstances, we shall not fall into this error:—Fracture is caused by a fall on the elbow; luxation by a fall on the hand, the arm being extended. In luxation, the relation of the olecranon with the condyles of the humerus is changed. In fracture they retain their natural situation. In luxation, the forearm, slightly flexed, is fixed in that position; force is necessary to flex it further, or completely to extend it, and the effort causes much pain. In fracture we can move the forearm; and this movement usually moves the inferior fragment, so as to occasion crepitus. In fracture, reduction is easy, but displacement is reproduced; reduction of luxation requires more force, but, once reduced, there is no tendency to displacement.

Treatment.—In the treatment of this kind of fracture, it has been proposed to place the limb in a state of extension, and to apply

four splints, to include the arm and forearm. Though this position may on the whole answer best as far as apposition is concerned, the pain occasioned is often intolerable, and if anchylosis result, a straight is much less useful than a semiflexed arm; therefore, a partially flexed position is generally preferred. After the limb is properly rolled, elbowed splints, of a proper angle, do best. Some persons employ an anterior splint, which will fit closely into the bend of the arm, and this Sir A. Cooper recommends. After the second week, it is desirable to gently move the arm, for the purpose of lessening the chances of considerable rigidity, or anchylosis.

SEPARATION OF THE CONDYLES.

Separation of the condyles is more frequent in young children than at any other period, and is commonly produced by a fall on the elbow. The symptoms are projection of the epiphysis, fixed pain at the point, increased by pressure, and by flexion or extension of the forearm. Crepitation is sometimes produced by rotating the radius, but that is uncertain. The tumefaction is, however, often so great as to mask the principal symptoms. In the various specimens I have known there was no osseous union.

Treatment.—In treating this injury, the forearm should be flexed at a right angle with the arm: the arm and forearm are rolled; an elbow splint, which in children may be made of pasteboard, must be adapted to the joint; the arm is placed in a sling; and, as early as it can be safely done, the joint must be moved. If there be much contusion or wound, the limb may be placed in a semi-flexed position upon Sauter's apparatus; and if the injury to the soft parts be dissipated before the fracture is united, such an apparatus as I have already described may be applied.

SUPERIOR EXTREMITY OF HUMERUS.

The upper extremity, the surgical, or anatomical neck of the humerus, may be the seat of fracture, but the former is by very much the most frequent. When the surgical neck suffers, the superior fragment yielding to the action of the supra and infra spinatus muscles, is tilted up as in the diagram (fig. 4), whilst the inferior fragment is drawn inwards by the pectoralis major, teres major, and latissimus dorsi, and upwards by all the muscles which proceed from the shoulder to the arm and forearm, but the upward movement is rarely great. If the bone be fractured at the level of the tuberosities, the fragments retained by the tendinous insertions surrounding the fracture are very little displaced. If the head of the humerus be detached, the inferior fragment may be drawn a little up-

wards and outwards by the action of the deltoid, supra and infra spinatus muscles, but even then the displacement is trifling.

Extra capsular fracture of the superior extremity of the humerus is consolidated as in ordinary fractures; but if the head alone be completely detached, it appears to be very doubtful whether osseous union will occur. Stalactiform prolongations may arise from the inferior fragment, and embrace the circumference of the superior fragment, but a false joint is more frequently formed. Indeed it is difficult to conceive life being preserved in the head of the humerus completely detached. Still there are on record eight such cases, in five of which union took place.

It is almost always a direct violence which produces these fractures, and they are usually complicated with considerable contusion. Still a fall on the elbow or the head, the arm being separated from the trunk, will occasionally produce it.

Symptoms.—If the fracture happen at the level of the tuberosities, there will be very little deformity. Pain, and inability to use the limb, will lead us to suspect fracture; but those symptoms are often occasioned by contusion, and we must put the hand upon the shoulder, and endeavour to produce crepitation. If the fracture be in the surgical neck, the deformity will be very apparent; the upper end of the inferior fragment will project in the axilla, the elbow will be removed from the trunk, and a marked depression will exist below the acromion. This condition may be mistaken for luxation downwards; in both there is depression below the acromion, but it is nearer the acromion in luxation. The projection in the axilla is very trifling in fracture as compared with luxation: although the arm is removed from the side in fracture, very little pressure upon the elbow will overcome the resistance; much pain occurs, and more pressure is required, in luxation. The reduction of fracture is easy, of luxation is difficult; the displacement in fracture is soon reproduced after reduction, not so in luxation. Of course, if there be crepitation, all uncertainty is soon dissipated.

Fracture of the superior extremity of the humerus is more serious than that of the body, because of the vicinity of the joint, the violence which has produced it, and the impossibility of exact reduction.

Treatment.—In all these cases reduction is imperfect, because the fragment is too short to allow of the hand exercising any action on it. The limb must be placed in a state of semi-flexion, fixed to the side of the trunk, and supported by a sling. Where the surgical neck has suffered, the only effectual means of applying any pressure upon the part is to moisten the bandages which are passed on the shoulder in white

of egg or starch, so as to fix them to the point. Sir A. Cooper, after rolling the arm from the elbow to the shoulder, places two splints on the internal and external surface, places a cushion between the chest and the arm, and places the arm in the sling. Probably no apparatus will exactly restore the conformation of the part, because none acts on the superior fragment; but the slight deformity which results is of no consequence. The apparatus should remain applied for six or seven weeks.

THE FOREARM.

The superficial situation of the two bones forming the forearm, their size, their mode of articulation with the humerus, which does not allow of lateral movement, are sufficient reasons to account for the frequency of their fracture. The radius is more frequently fractured than the ulna, because it, almost alone, sustains the hand, and the shocks produced by falls upon the hand are received by it; there is, however, a case mentioned by Berard, where, by a fall upon the hand, both bones were fractured. Though fracture of both bones may occur at any point, the middle and the inferior suffer much oftener than the superior extremity. Usually both bones are fractured at the same level, but this is not constant. Such fractures are almost always caused by direct injury, and therefore it is that comminution and contusion are not unfrequent. There is almost always displacement when there is simultaneous fracture of these bones; this I admit, though I am not disposed to go so far as many surgeons in support of the opinion, that much displacement may result from the action of the pronators. The superior fragment of the ulna, firmly articulated with the humerus, is the only one not displaced. Displacement as to length is difficult, because the interosseous ligament is opposed to it.

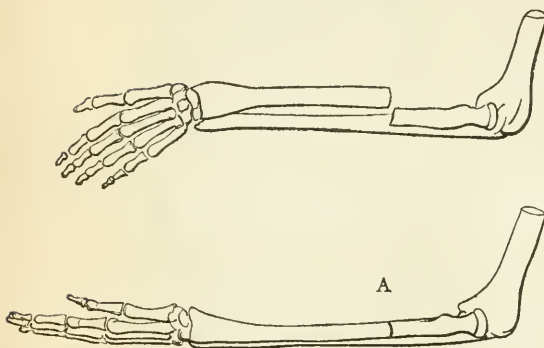
Fracture in these bones is detected by the change in the form and direction of the limb, by the mobility of the forearm at the fractured point, by crepitation, by the difficulty of bringing the limb prone or supine, and by the severe pain which is felt when such motion is attempted. When the fracture is seated near the wrist, formerly, and even at present, it is very often mistaken for luxation of the wrist.

Simple fracture of the forearm is generally not a serious injury; still, if not carefully attended to, the radius and ulna may unite together, though it rarely happens, and pronation and supination be lost. Even when complicated, fracture of the forearm is much less serious than a similar fracture of the leg.

Reduction of this fracture is usually easily accomplished. The patient sits on a chair; the forearm is flexed, and half prone; an assistant takes the hand, and

makes extension, another makes counter-extension above the elbow. The surgeon stands on the outside of the limb, places the fingers of each hand upon the anterior, and thumbs upon the posterior surface of the forearm, as near as may be at the level of the interosseous space. The reduction made, if necessary, compresses, imbibed with some evaporating or cooling lotion, are applied; if not, some persons prefer rolling the arm, from the fingers up to the elbow, with starch or common bandage: in the latter case, a couple of splints are applied on the dorsal and palmar surface of the arm, and fixed there by rollers. The arm is then semiflexed, placed between pronation and supination, and supported by a sling, across the chest: some persons place the palm against the chest, but the diagrams show that the proper attitude is

Figs. 5. and 6.



that in which the palm is directed upwards, so that, in the language of an old preceptor of mine, you can spit in it.

It is wise to examine the arm every ten days, to ascertain that pronation and supination are not deranged; from the fourth to the sixth week, consolidation is complete. When the fracture is seated near either extremity of the forearm, towards the end of the treatment they must be gently moved, to ascertain that false ankylosis is not taking place. Some persons place at the dorsal and palmar surface, between the bones, a cord-like compress from the elbow to the wrist, to prevent union taking place between the bones: there is not, however, much fear of this; for in museums, although we may see many cases of very deformed union, we very rarely see a specimen in which union has taken place between the bones.

THE RADIUS.

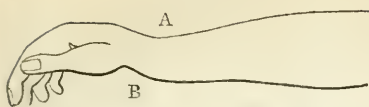
Fracture of the radius is much more frequent than that of both bones. This is caused principally by the connections of this bone. They may be transverse or

oblique, may occur at the middle or towards the extremities of the bone; may be a consequence of a blow received on the bone itself, or a fall upon the palm of the hand. In the latter case, the bone is pressed between the hand and the humerus, which supports the weight of the trunk, and, it is said, often fractured in the middle third. My experience certainly does not favour this conclusion.

In length no displacement occurs; superiorly and inferiorly the fragments are retained by the articular apparatus, and also by the interosseous ligament. It is said that they are drawn towards the ulna by the pronator and other muscles, but I have never been able to satisfy myself that much influence is exercised in this way.

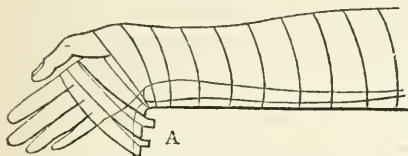
Diagnosis.—When, after a fall on the palm or a blow on the radial border of the forearm, severe pain and inability to pronate or supinate are experienced, a fracture of the radius may be suspected: to confirm or reject the suspicion, the fingers are passed carefully along the radial border of the forearm. If there be fracture, we feel at the painful point a depression, an absence of resistance, or even an inequality of the fragments; pronation and supination are painful, and may occasion crepitation. If the fracture be near the superior extremity of the bone, it is not so easily detected, because of the thickness of the soft parts which surround it. In such a case, it has been advised to fix the superior extremity between the finger and thumb, whilst we impress upon the inferior fragment pronation and supination; but in a fat arm this is not easily done. Difficulties have been experienced in detecting fracture of the inferior extremity of this bone. There is little displacement towards the ulna, because the bones are naturally almost in contact in this region, and it has often been mistaken for luxation of the wrist. Upon this point, Cline, Cooper, and Dupuytren, have thrown much light; the latter surgeon doubts the possibility of luxation of the wrist; but here, as we shall see, he was wrong. If it be true that such an error may not be seriously injurious to the patient, it may certainly damage the reputation of the surgeon. This fracture may or may not implicate the radio-carpal articulation. It is always more serious than that of the middle third of the bone, because of the rigidity which it leaves after it at the joint, and which is very slowly dissipated, especially in old men. Crepitation and the slight displacement shewn below (fig. 7), are our only guides. If the patient be very young, the mobility of the inferior fragment may be very sensible; but then crepitation may be wanting, for it may be only the separation of the epiphyses.

Fig. 7.



Treatment.—The treatment of fracture of the radius is similar to that of the forearm; only that direct extension is not necessary, but simply inclination of the hand towards the ulnar border of the forearm, so as to act principally on the radius. If we drag equally on the two bones, a portion of the force will be entirely lost on the ulna. Dupuytren's splint, of which the following is a modification, accomplishes that ob-

Fig. 8.



ject, by removing the inferior fragment from the ulna, and preserving the interosseous space, but it offers no obstacle to the displacement of the superior fragment.

ON THE INFLUENCE OF LIQUIDS

ON THE BODY IN HEALTH AND DISEASE.

By MELBOURNE B. GALLWEY,
Assist.-Surgeon Royal Artillery.

[Concluded from page 356.]

THE safety-valve against engorgement of the blood-vessels, where liquids have been consumed in inordinate quantities, is resident in the skin, in the lungs, and in the kidneys. "All soluble matters," according to Woeller, "which do not suffer decomposition in the system, but more especially the superfluous matters, are got rid of by means of the kidneys." "The excretion," says Müller, "of superfluous water from the blood by the kidneys appears to take place with extreme rapidity, it nearly keeping pace with the absorption of watery fluids from other parts of the body into the blood." I knew myself a remarkable instance of a man, in whom the idiosyncrasy existed, being able to evacuate urine at the moment of drinking, and of continuing to do so as long as he kept up the supply of liquid by the mouth; and this, though the bladder should have

been empty but the moment before. We require, indeed, no accumulation of facts to convince us that, in a state of health, the kidneys alone might of themselves, perhaps, be capable of excreting all the fluid which we introduce into the circulation, and this very probably is the principal office of these organs. I say the principal, because we must bear in mind their important function of separating urea, and other salts from the blood. But this activity in the office of the kidneys no longer obtains in disease. In febrile and inflammatory affections we notice invariably a diminution of this secretion, whilst there is no equivalent increase of perspiration or of pulmonary vapour. In cholera we see it altogether suppressed, a disease in which the urgency of thirst is only allayed by excessive potations of water; and, did not the latter find a speedy and extraordinary escape through the exhalants of the intestines and of the skin, (the capillaries of which are here unusually paralyzed), we might surely anticipate general dropsy, if not coma, from engorgement of the cerebral vessels, or apoplexy from a rupture of them.

It is a matter of question, I think, how far the abstraction of liquids from the patient might not be of service, in that morbid condition of the system where the secretion of urine is entirely suppressed during a state of otherwise apparent health*, a disease which Dr. Willis defines by the term *anuria* *apyretica*. Whether dependent on an alteration of structure, or functional only in character, the disease is one of the most formidable we can encounter; and about the treatment of which we must busy ourselves so early, that, to the attendants around, the patient would seem to have nothing the matter with him, if we desire to stay its fatal progress. In such cases, it is usual to pour diluents into the blood, with the hope of determining them to the kidneys; but such means are seldom sufficient, nor, indeed, is any other treatment that we know of. Coma sets in rapidly; and the patient dies apoplectic. Supposing, however, the suppression of urine to supervene on an injury to the spiuë,

* I remember an excellent paper on this disease, in one of the numbers of the *MEDICAL GAZETTE*, of some three or four months ago. The author (whose name I forget) detailed some interesting examples of the affection, all of which I think had a fatal result.

or on well-marked disease of the kidneys, where the system takes the alarm, and other secretions besides itself are suspended more or less; supposing, too, that the kidneys are obstinately indisposed to be influenced by diluents, I hold that the farther administration of them can do no nothing less than hasten the comatose affection of the head; and that the pressure on the brain, which is often believed to result from the regurgitation of urine thereon, and into the cavities of the organ, is fully as likely to be aggravated if not mainly produced by the engorgement which this practice entails on the blood-vessels.

I would particularly recommend an abstinence from drinks to be observed in the treatment of scarlatina, more especially if the patient happen to be of a sanguine temperament, or a plethoric habit of body: and this precaution I insist on, because of the dropsical sequela which frequently results on the disease, a feature in its history which occasionally imparts to it a tragical complexion, even when the primary symptoms may have been unusually mild. This interdiction of liquids, in scarlatina, I hold to be called for, if there is anything of truth in what I have offered concerning their misapplication in febrile and inflammatory diseases: for, on the same principle, and on the same account, I venture to call in question the propriety of their exhibition here, as I did when reviewing their influence in the latter conditions. Of the pathology of this particular form of dropsy we know very little; but whether it proceed from an inflammatory tendency lurking in the system, or from an absence of tone in the vessels, the employment of liquids must be equally injurious. So convinced am I of the reasonableness of such an objection, that, during the fall of the last and the spring of the present year, when this garrison had been infested with scarlatina in common with the other exanthemata, I made the experiment of withholding liquids in the treatment of such particular cases as I was able to exercise a rigid interference in, with a view to determining the extent of their influence on the subsequent dropsy. That I might not be biassed unfairly in my observations by the view I had preconceived of their influence, I made a selection of cases, the notes of which I

have now before me, and treated as many as twenty on the dry plan, whilst, to a similar number, I urged, as a part of the treatment, that water might be freely and frequently allowed. That the result which ensued was the consequence of accident may possibly have been the case. It was this. Out of the number treated on the former plan, one only was attacked with anasarca on the close of the disease: but of those to whom water was liberally administered, six were subsequently affected with anasarca of the face and extremities; one died of well-marked hydrocephalus; and another of hydrothorax combined with ascites. How far the effusion into these vital cavities, in the two latter cases, was connected with the previous scarlatina, I pretend not to determine. It is enough that I register the facts. And how far the total withdrawal of liquids, in the former cases, may have had to do with the subsequent immunity from dropsy, is a question which we can only speculate upon, although the presumptive evidence, I think, is strongly in favour of the tenableness of my position.

If the preceding observations should hold good in relation to the sequela of scarlatina which I have spoken of, they must not less apply to dropsical affections in general. The hydropic subject drinks, and that too often to excess, (for, wherever there is a large demand on the watery portion of the blood, whether through the intestines, the skin, or other texture, there is thirst in attendance proportionally great) to supply the waste occasioned by the escape of the aqueous part of the blood into the cavities or the cellular tissue of his body. "But," says Cullen, "by withholding the use of fluids in dropsy, you will diminish the quantity of fluids secreted, and allow the secretories of the kidneys to fall into a state of inactivity and collapse." Paris quotes and considers this maxim as a sufficient answer to those who defend the practice of enjoining an abstinence from all fluids in dropsy. But, on this point of contention, I venture to be at issue with Cullen, and think his position particularly untenable, under circumstances where the secreting organs, as is sometimes the case, are losing ground in the race between the activity of the exhalants and themselves. I think, if we reason on the matter, that everything

is in favour of the assumption that excessive quantities of liquid are injurious in a case where the mouths of the exhalants (if I may so speak) are constantly patulous, and pouring their contents into the cavities of the body as rapidly as they can be supplied to the circulation, and where, again, the absorbent energy of the system is enfeebled or inert. The effect will probably be slow and imperceptible at first; but not less certain, I think, if the indulgence in liquids be persevered in,—

"Gutta cavat lapidem non vi sed sæpe cadendo."

Besides, we are accumulating the amount of evil in another way, inasmuch as the indulgence in drinks, to the extent to which they are coveted, must impoverish the quality of the blood, and disable it the more from making head against the disease. Still much must be hypothetical here; but, in the absence of knowledge more substantial, we should choose the hypothesis most consistent with reason, and in accordance with our senses. Those who are familiar with the beautiful lectures of Dr. C. B. Williams, published some time ago in the *MEDICAL GAZETTE*, on the diseases of the thorax, will remember that he urges the withdrawal of liquids, in the treatment of catarrh, as a means the most powerfully calculated to knock that affection on the head at the outset of its career.

Enough has been said already on the frequency with which the secretions of the skin and of the kidneys are diminished in disease. Supposing this state of inactivity to continue for any time, and the influence of medicine insufficient in restoring them, it follows assuredly that liquids, if persisted in further, can only escape through the exhalants of the intestines, or by evaporation from the pulmonary mucous membrane. On the first of these outlets, I need say very little, since the torpor or spasm, if you will, of the intestinal capillaries in general, keeps pace with the like condition of the vessels of the kidneys, and of the surface of the body.

Concerning the latter system of vessels, viz., the exhalants of the lungs, we have no decided evidence, perhaps, of the suspension of their function in disease; although from analogy we are certainly warranted in supposing them to harmonize in their action with the secretory vessels of other organs.

"There can be no doubt," says Paris, "that, in certain states of disease, the exhalants of the lungs, like those of the skin, are affected by a spasmodic constriction, in consequence of which the usual quantity of fluid for the lubrication of these parts is not effused; whence a train of morbid phenomena arises." To what extent the vapour from the lungs is capable of being increased, under certain emergencies of the system, we are as little able to determine; but it does not appear that the amount of this exhalation is ever very large during health, experiment having failed hitherto in estimating this with any precision. Cruikshank, in his experiment of breathing for the space of an hour into a bottle, and of collecting the vapour which had condensed in it at the end of that period, observes, "If I lost a hundred and twenty-four grains of vapour, by respiration, in an hour, at the same rate I should have lost six ounces, one drachm, and thirty-six grains in twenty-four hours." Sanctorius, from experiment, estimates the amount at a much greater average; whilst Paris assures us more recently still, "that twenty ounces of water are given off by the lungs during the twenty-four hours." It is not very easy to account for the discrepancy in the results of these several physiologists; the less so, as Cruikshank performed his experiments with every attention to the most minute consideration which could influence in any degree the correctness of his deductions, and this, too, with uncommon labour and undiscouraged zeal.

Thus have I spoken at length on the probable influence of liquids in diseases in the which they are freely administered to allay the accompanying thirst; and I have done this more particularly with a view to call in question the propriety of that practice which sanctions at present their exhibition under the circumstances in which I have noticed them.

It now only remains for me to offer a few observations on the operation of liquids, which are destitute of nutritive properties, on the animal system in health.

Wilson Philip remarks, in his *Treatise on Digestion*, that "In respect to fluids, water is evidently intended for the proper dilution of our food." But this is not the only, nor does it appear to be the principal purpose for which we are induced to drink, which seems generally to

be, to supply the waste of moisture occasioned by the various secreting surfaces, and particularly by the skin, which is the most extensive; hence everything which promotes perspiration increases thirst. For a similar reason, diarrhœa, and the operation of a cathartic, have the same effect. I feel by no means certain, that matter is wholly devoid of some inherent nutritive property, resident either in itself or the elements of which it is composed; else, how shall we account for the obesity which follows occasionally on an inordinate indulgence in tea, and in similar liquids?

There is an interesting passage in Paris's *Pharmacologia*, on the very question. "Water," says he, "under certain circumstances of the body, appears to suffer decomposition, and to have its elements appropriated to new combination. Count Rumford has endeavoured to prove, that the surprisingly small quantity of food which is sufficient for nourishment, when converted into rich and palatable soups, is owing to the culinary process having prepared the water for chemical decomposition,* and that this is ultimately effected during the act of digestion." "It cannot be denied," continues the same, "that exorbitant potations of water have a tendency to produce fat; but this may depend upon the vascular distension which is thus occasioned." "Gin-drinkers, before they become materially injured by the habit, grow extremely corpulent, as may often be witnessed in unfortunate Cyprians of the lower orders. Can the hydrogen of the spirit contribute to this effect?"

I have said that an excessive indulgence in tea, and in *slops* of a similar nature, has a tendency to engender obesity. I should rather say, perhaps, that it *seems* to produce such an effect, for I know of no facts which can positively establish the relation of cause and effect between them, beyond what my own observation has taught me to conclude, and what has been insisted on by others who have paid particular attention to the influence of liquids on the system. A celebrated physician of the present day, well known for the abstinence from liquids which he enjoins in disease, was asked in my hearing, "how a tendency to corpulence might be overcome," when

he replied to his patient, by inquiring into the quantity of tea which he consumed in a day? "Two and often three breakfast-cups full I always drink in the morning, and at night, said the applicant." "Reduce your allowance to one at most," replied the other, "and you will cease to grow fat." I mention this anecdote, unimportant as it may seem, from the fact of the physician being one who deduces his knowledge from the book of nature itself, and than whom few have had more extensive opportunities of studying it. And "he that giveth his mind to observe, will meet with many things, even in vulgar matters, worthy of observation." I admit, however, that potations of watery drinks, howsoever freely indulged in, will not invariably produce this effect on each and all of its votaries; because there are individuals in whom absorption so equally keeps pace with the deposition of fat, that, do what they will, and commit no matter what excesses, such persons will often not acquire an addition of six ounces to their weight, no—not perhaps in as many years; whilst others again have a natural predisposition to obesity, which, though they may lower the scale of their diet to the lowest point consistent with safety (and, many there are of the opposite sex, whom the *cito pede* march of *embonpoint* reduces, from motives of vanity, to such an alternative), still gains ground upon the inactivity of the absorbents.

We are much in the dark, in good truth, concerning this matter, and know very little of the laws which regulate the deposition and absorption of fat. Nevertheless, I maintain, that its deposit is a consequence frequently of fluids, which would seem to contain nothing manifestly nutritive in them; but whether this arises alone from a distension of the blood vessels, or from any other *physical operation* which we know not of, must in the present state of our knowledge continue undetermined.—But, it will be said, in disproof of the *fattening tendency of water*, that the miserable objects amongst the poor, who subsist so extensively on tea, and who really are in the habit of making this article their dinner or principal meal in the day, are notoriously wan and emaciated, present the aspect of inanition, and seem prematurely falling into the condition of the "lean and slippered pantaloons." And so they are—the ob-

* "Fish, especially those of the cetaceous tribe, constantly decompose water, and live upon its hydrogen."—Paris's note on the above.

jection is unanswerable, in so far as the simple fact is concerned. But, in their case, we notice this striking peculiarity, this palpable difference between theirs and the classes above them in society, who indulge in the article in question, not through necessity, but rather as a luxury; viz., that, whilst the former have *little else besides* their tea to live on (which supports, because it refreshes, or excites them) the latter, in addition, are pampered and supported with *that little else besides*; so that in their case it is an addendum to their more substantial diet, and is only partaken of when the vascular system is already perhaps overloaded with its contents. Dr. Uwins, in his Treatise on Indigestion, has these pertinent and excellent remarks on the present subject:—"Amongst the poor of the metropolis, we are sorry to see the custom so generally prevalent, of taking tea at almost all times of the day; since the temporary stimulus that it gives is followed by that sort of relaxation of nerve and depression of spirit which induces the consumer to resort to a still more reprehensible and baneful custom, viz., that of taking raw and ardent spirits; a practice respecting the mischief of which there can be no room to doubt."

Woolwich, May 6th, 1840.

ON A NEW SPECIES
OF
BILIARY CALCULUS.

To the Editor of the Medical Gazette.

SIR,

WHILST engaged in examining the extensive collection of calculi, in the museum of the Royal College of Surgeons, which had been entrusted to me for that purpose by the board of Curators, I remarked, among those in the Hunterian collection, one which, from its extreme lightness and peculiar appearance, I was led to suspect had been incorrectly described in the manuscript catalogue as consisting of the "mixed phosphates."

This calculus was externally of a dirty-white colour, and had the greasy feel of cholesterine calculi. It floated on water; and, when applied to the tongue, left an impression of bitterness. It was of an oval figure, slightly flattened, one inch and a half in length, rather better than

an inch in thickness, and about an inch and a quarter in breadth; but, being broken in this direction, its exact measurement could not be ascertained. It readily yielded to the knife, and the cut surface had a polished appearance. Its structure was lamellar; being composed of white and reddish-yellow layers, arranged concentrically, and alternating with each other: the layers were easily separable. At its centre there was a small vacuity.

When heated before the blow-pipe it readily fused, then caught fire, burning with a clear flame, and giving out the smell of animal matter, but nothing of an urinous character. It left a carbonaceous residue, which, by raising the heat, was converted into a white ash. This ash was alkaline, dissolved in water and dilute acetic acid, and the solutions gave a white precipitate with oxalate of ammonia: it was therefore lime.

When digested in boiling water, the water became slightly brown, but no apparent solution took place; the water, on evaporation, left a transparent yellowish brown residue, which had a bitter taste, and resembled inspissated bile.

Boiling alcohol extracted from it only a minute quantity of white fatty matter, which was deposited on cooling.

A solution of caustic potass removed the whole of the yellow colouring matter, but the rest of the calculus was unacted on. The potass solution was dirty green; and, when neutralised with muriatic acid, deposited a scanty precipitate of the same tint.

When digested in nitric acid, effervescence took place with the escape of a little nitrous acid; it then melted into a transparent oil, which, on cooling, concreted into a white fatty matter. This substance, when washed with distilled water, melted at a temperature much below that of boiling water.

When, instead of nitric acid, muriatic or acetic acid was employed, the portion of calculus did not melt until it had been removed from the acid; it then presented a similar appearance to that obtained by the action of nitric acid: consequently, this white fatty matter was not formed by the action of the nitric acid.

In all these cases the acids retained lime in solution.

The fatty matter, separated by the action of acids, was partially soluble in boiling alcohol; and the solution, on cooling, deposited shining crystalline

scales. With caustic potass, it formed a ropy, almost gelatinous solution, and was precipitated in white flakes on the addition of an acid.

A small piece being placed on the bulb of a thermometer previously heated, began to solidify when the temperature had sunk to about 135° Fahrenheit.

From these experiments I concluded, that this calculus consisted of margarate or stearate of lime, mixed probably with the oleate of the same base, and some of the other constituents of the bile. That the lime was in combination with the fatty acid was indicated by the insolubility of the calculus either in alcohol or caustic alkaline solutions, until it had been previously digested in some acid.

The minute quantities on which I had hitherto operated prevented me from determining whether only one or more of the fatty acids were present. The following analysis was therefore made:—

ANALYSIS.

12.80 grains of the calculus, previously dried *in vacuo* over sulphuric acid, were boiled in distilled water. A peculiar odour was given off, and the water acquired a yellowish-brown colour. Being evaporated to dryness, it left a transparent resinous-looking residue, which weighed 0.84.

This residue, when digested in alcohol, left 0.24, in the form of dirty, yellow flakes, which, in distilled water, swelled up and ultimately dissolved, forming a solution which, in its chemical character, exactly resembled that of the mucus of the gall-bladder.

The alcoholic solution being evaporated to dryness, the residue was re-dissolved in water; the solution was intensely bitter.

With muriatic acid it gave a copious viscid precipitate; acetate of lead produced likewise a viscid precipitate; and the supernatant liquor, when clear, was again troubled by a solution of sub-acetate of lead.

The 0.84 consisted, therefore, of mucus of the gall-bladder..... 9.24

Inspissated bile..... 0.60

After water had extracted from the calculus all that it was capable of dissolving, it was treated with successive portions of boiling alcohol.

The first alcoholic solution, on cooling, deposited a white matter, which did not readily re-dissolve in hot alcohol, or in æther, but was acted upon by acetic

acid. It appeared to be part of the calculus that had been simply dissolved; the quantity, however, was too minute to be estimated. The alcoholic solutions were filtered, and, being mixed together, the whole was gently evaporated. As the liquid became concentrated it deposited some white fatty matter, and acquired a yellow tinge; a residuum was ultimately left, which had the appearance of a mixture of a fluid and concrete oleaginous substance. On the application of heat it became a yellow oil, which, on cooling, only partially solidified. It weighed 0.47.

It strongly reddened litmus paper; dissolved readily in a cold solution of caustic potass; and was precipitated in soft flakes on the addition of an acid.

This substance consisted, therefore, of oleic acid mixed with margaric and stearic acid.

Strong acetic acid, diluted with twice its bulk of water, was now poured over the calculus, and the action of the acid aided by a gentle heat. The insoluble residue was collected on double filters, washed and dried.

The acetic solution, with its washings, was reduced to a small bulk, and a solution of ammonia added. After the lapse of several hours no precipitate appearing, the excess of ammonia was nearly neutralised by a solution of oxalic acid; a white precipitate fell, which, when washed, dried, and heated to a dull redness in a platina crucible, left 2.09 carbonate of lime = 1.17 lime.

The remaining liquid being evaporated to dryness, and the ammoniacal salts expelled, a residuum was left, which weighed 0.10. Water dissolved a portion of this. The solution was alkaline; and, when evaporated, minute crystals were formed, which slightly effervesced in acetic acid. Their solution not precipitating chloride of platina, leaves little doubt of their being carbonate of soda; the small portion which remained undissolved proved to be carbonate of lime.

The matter left upon the filter after the action of the acetic acid was again digested in boiling alcohol. A considerable portion dissolved, and the remainder had acquired a much deeper colour. It was collected on the same filters, which were repeatedly washed with boiling spirit. When dried and weighed against the outer filter, it amounted to 0.86.

This substance possessed a brownish-yellow colour; it dissolved in solutions

of caustic and carbonate of potass, forming solutions having nearly the same colour.

Muriatic acid rendered it green; and, when added to its alkaline solution, threw down green flocks. With nitric acid it formed a red solution.

This substance was, therefore, identical with the colouring matter of the bile, and which forms the principal constituent of the biliary calculi of oxen.

The alcoholic solutions were concentrated by careful distillation in a small retort. The liquid remaining in the retort, when cold, formed a soft crystalline mass, composed of brilliant plates, and having a pearly lustre, very much resembling margaric acid.

This substance, when fused, and kept for some time in *vacuo* over sulphuric acid, weighed 8.88 grs.

It melted at 136° Fahrenheit, and on cooling became a crystalline solid, reddened litmus paper, and was easily soluble in a cold solution of caustic potass. The solution, when concentrated, was ropy and gelatinous; when dilute, it formed a slightly milky mixture, with minute glistening particles floating in it. On the addition of an acid, the substance was thrown down in the form of white flakes, which possessed the same properties as before solution.

When boiled with the alkaline carbonates, it was dissolved, with the escape of carbonic acid.

By re-dissolving it in hot alcohol, crystalline plates were deposited on cooling, which after washing with cold spirit, fused at about 140°. The low fusing point of this substance evidently indicates the presence of oleic acid. In order to ascertain whether the crystals fusible at 140° were pure margaric acid, or stearic acid rendered more fusible by an admixture of oleic acid, they were again dissolved in warm spirit, and the crystals, as soon as formed, dried by compression between folds of blotting paper. By repeating this process two or three times, the fusing point was raised to nearly 160°. This must, therefore, be regarded as pure stearic acid; and as I find that both stearic and margaric acids require to be several times re-crystallised from their alcoholic solutions, to free them from even small quantities of oleic acid, and as no decided indication of the presence of margaric acid could be detected in the mother liquors, I am induced to believe that, by the above

treatment, oleic acid only had been separated, and that, consequently, margaric acid did not enter into the composition of the calculus. It would, however, be impossible to speak decidedly on this point. The result of the analysis is as follows:—

Stearic acid, mixed with a small proportion of oleic acid.....	9.35
Lime.....	1.17
Soda, with a trace of lime.....	0.05
Yellow colouring-matter of the bile	0.86
Inspissated bile	0.60
Mucus of the gall-bladder	0.24
	<hr/>
	12.27
Loss.....	53
	<hr/>
	12.80

The greater part of the loss in this analysis should be added to the stearic acid, as owing to the sudden extrication of vapour while under the receiver of the air-pump, a small part of the acid was lost; but I have preferred giving the weights actually obtained, to making any allowance for known sources of error.

The composition of this calculus clearly points out its biliary origin; but whether from man or the brute must remain doubtful, as there is no history to guide us.

Stearic, margaric, and oleic acids, exist in the bile of oxen in combination with soda; and according to Lecanu and Casaseca,* stearic and oleic acid in that of man; the latter I have frequently detected, but I cannot find that these acids have ever been noticed as entering into the composition of biliary concretions; much less forming the prominent constituent. I was unable to detect the slightest trace of these acids in five specimens, selected from about 200.

From cholesterine calculi, it is readily distinguished by the absence of any crystalline structure when broken, which, unless the quantity of colouring matter be very large, is always more or less apparent in that variety; also by its insolubility in alcohol or æther, and by readily dissolving in these menstrua and in a cold solution of caustic potass, after it has been acted upon by an acid.

Before I conclude, I am anxious to rectify an error which I inadvertently

* Gmelin, *Handbuch der Chemie*.—*Journal de Pharmacie*, 12.

committed in my paper on the calculi in the Museum of St. Bartholomew's Hospital; I there stated, that urate of ammonia had always been confounded with the uric acid variety, in the tables that had been published on the relative frequency of the different species of calculus. This was not, however, the case in a paper by Dr. Yelloly, in the *Philosophical Transactions* for 1839-30, containing the analysis of the Norwich collection; and I regret that I have not had an opportunity of making this acknowledgment sooner.

THOS. TAYLOR, M.R.C.S.

New Bridge Street,
May 9th, 1840.

A notice of this calculus was sent to the Board of Curators, in March 1839, but a variety of circumstances have delayed its publication.

INDIGENOUS MEDICINES.

To the Editor of the Medical Gazette.

SIR,

AT a time when the unusual warmth of the season has once more invited the botanist to resume his researches into the treasures of the vegetable kingdom, allow me to impress upon your readers the expediency of encouraging a better knowledge of the sanative virtues of the vegetable productions of our own soil, which have been for so many years overlooked, and where late experience has shewn that there are many valuable though unknown remedies, often equal, and, in some instances, superior to the roots and seeds imported from abroad. An overweening reliance on the efficacy of native herbs was one of the foibles of our ancestors. Ours is in the opposite extreme. The intercourse we hold with every part of the globe has introduced so great an abundance of exotic medicine, as to draw off our attention from the productions of our own country. The accession of remedies, too, from the mineral kingdom, has still further increased this neglect. But without implicitly subscribing to the opinion entertained by many able physicians, that in every country there are to be found indigenous remedies suited to the diseases of that country, it is beyond all controversy, that the fashion of the age, and the prejudice in favour of every

thing that is foreign, has excluded cheaper, and, in some instances, more efficient means, to be had nearer our own doors. I shall not be understood, of course, as in the slightest degree disparaging the use of exotic remedies, where the same benefit cannot be derived from native productions; but I do not see the wisdom of ransacking every corner of the habitable globe, at so much labour and expense, for what may be, in so many instances, supplied more efficiently in our own fields.

In testimony of the truth of this, we have only to look to the valuable catalogue of remedies, some of which have enriched our *Pharmacopœia*, the productions of our own soil—such, for instance, as the hyoscyamus, conium, belladonna, stramonium, digitalis, ilicine, salicine, bronza, ergot, and some others, and, from long experience in the use of indigenous herbs, I feel convinced that it is owing to nothing but our own neglect, that the catalogue of native remedies is not much greater.

But a few years ago the medical world were unacquainted with the remarkable properties of digitalis, and its power over the circulation. Its use even in spasmodic and hydropic affections was not known. The substance of what we are told by the older writers is, "that it was used for rheumatism and other stubborn complaints; that it works violently upwards and downwards, and cures also quartan agues, &c., &c." Medical men were afraid to use the hemlock, before Dr. Stork introduced it into practice, and proved satisfactorily that it might be taken in small doses with great safety, and that, without at all disordering the constitution, or even producing any sensible operation, it sometimes proves a powerful remedy in many obstinate disorders; and yet such is the state of botanical knowledge, that other herbs have occasionally been mistaken for it. The stramonium, though not perhaps indigenous, is of common growth; yet, as a remedy, was not used before Dr. Storck employed it in mania and melancholy; and since his time it has been used in a variety of ways, and sometimes with benefit. Some of the properties of the colchicum have been long known; but its use was partial, as it was regarded principally as a diuretic.

The same observations will apply to some other indigenous herbs, and if, as I trust, the attention of the medical

world be once more drawn to this neglected department, a rich harvest of discoveries will ensue, and our present ignorance of the virtues of our own indigenous herbs will be regarded as a matter of surprise to future ages.

The flowers, the leaves, and every part of the taxus (the yew), indigenous in this country, are known to be of a poisonous nature, but on the authority of an Italian physician it is affirmed, that yew leaves, when administered in small doses to man, have a power similar to *that of digitalis on the action of the heart and arteries*, in a similar manner reducing the circulation, and if persisted in too long, or given in too large doses, as certainly fatal. It is, however, further said to have one decided advantage over digitalis, by its effects not accumulating in the system; so that it is a much more manageable and more efficient remedy.* I have been informed that a decoction of yew leaves, applied during the violence of a neuralgic paroxysm, has imparted a temporary cessation of pain; but I am not aware that in this country any attempt has been made to administer any form or preparation of it internally, or to use it as an external application.

Take another equally dangerously poisonous plant, the cause of many fatal accidents, the *ænanthe crocata*, and which is considered by Dr. Christison as the most energetic of narcotico-acid apiaciæ. Even this has been used in lepra and ichthyosis; and Dr. Hope found an infusion of the leaves useful in promoting the menstrual discharge.

There are six species of the papaver, described in Smith's "*Flora Britannica*," and many of them to be found in every part of the country; yet, what comparatively little use is made of them. How many valuable herbs, possessing diuretic properties, of which no notice is taken? Among these may be mentioned the *polygonum hydropiper*, *paritaria*, *spartium*, *pyrola rotundifolia*, *pyrola minor*, *daucus sylvestris*, and the *asperula odorata*. The last of these, to which authors ascribe such little virtue, appears to me to possess very remarkable diuretic properties. In some cases of abdominal dropsy its use has been followed by a considerable increase of urine, and diminution of the size of the abdomen. There are many other indigenous

herbs, too, which are well known to exercise an influence over the urinary organs. Some, like the *bryonia*, produce vomiting and purging; but whether this active property can be controlled by art, so as to be made available for the purpose of medicine, experience has not yet decided. The *scrophulariæ* possess also purgative and emetic properties. The *linum catharticum*, however, is very frequently employed by medical men; sometimes alone, as a gentle aperient; at other times, along with senna or some other purgative.

I may also mention the *menyanthes trifoliatum*, as a very useful herb; also, the *fumaria*, a common weed in dry waste ground, the herbage of which is bitter, slightly diaphoretic, and aperient: the juice was formerly administered in cutaneous disorders and obstructions of the urine.

The *euphrasia*, though it has lost its reputation in diseases of the eye, yet is still said to be useful in catarrhal inflammations of the eye: it is even said to be beneficial in catarrhal affections in general. The *solidago* and the *achilla* are extensively used in some parts of the country. But the names of English herbs I have already enumerated, are sufficient to show how desirable it is, to investigate this subject with more attention than has hitherto been given to it. The power which chemistry has given us, of concentrating the active principle of many herbs in a small compass, has already been applied with success to some indigenous herbs: a specimen of pyroline, from the *pyrola rotundifolia*, was sent to me some time ago, which was administered in the form of pills, which acted as a diuretic, and at the same time improved the appetite.

But great care will be required to avoid the errors of the older writers, who do not always agree in the properties they ascribe to herbs; some overrate the virtues which they have discovered, others attribute a curious medley of heterogeneous properties to the same herb, so that there is scarcely a disease, to which one or other of these properties might not be expected to give relief. The usual consequence of excessive panegyric has followed. Finding some at least of these ascriptions erroneous, we come at last to discredit the whole. Probably, one cause of such frequent errors arose from the mode of making preparations from the plant, as well as the time

* Burnet.

and manner of gathering them. The virtues of different plants reside principally, though not entirely, in certain parts of them; and we find that some prefer the root, some the leaves, others the seed. No wonder, then, that some difference of opinion should exist (as is the case with authors both ancient and modern), in estimating the real pretensions of any plant, when it is not always manifest which part of the plant has been the subject of investigation. Moreover, how great soever the virtues of a plant may be, want of skill in the manner of preparing or extracting its properties may render them inert, or the plant may have been collected at an improper season.

When it is considered that the use of foreign drugs entails so heavy an addition to the expenditure of a practitioner, and how much he could be relieved by the substitution of indigenous remedies, wherever it could be done without injury to his patient, I trust it will not be necessary to offer any further apology for having drawn the attention of your readers to a subject important to society, as well as to the profession.

J. K. WALKER, M.D.

Huddersfield, May 10th, 1840.

CASE OF ATROPHY OF THE GALL BLADDER,

WITH OBLITERATION OF THE BILIARY DUCTS.

To the Editor of the Medical Gazette.

SIR,

If you consider the inclosed case of sufficient interest, will you do me the favour to give it a place in your valuable journal.—I am, sir,

Your obedient servant,

GEORGE CURSHAM, M.D.

5, Saville Row, May 21st, 1840.

I was requested to see a child of the name of Wall, of the age of about six weeks. The mother informed me that the infant had been jaundiced from its birth, the surface being generally of a deep yellow colour. The stools were habitually white, composed (she says) principally of curdled milk. The urine was constantly of a very high colour, and producing such deep stains on the linen, that they could not be removed by washing. It had frequent attacks of vomiting, especially after taking food.

I first saw the infant about a week before its death, when all the above symptoms were still present. The infant moreover was restless and agitated, had feverish symptoms, and there was slight tenderness under pressure at the epigastrium and right hypochondrium. It had become much emaciated, and compared to what it was at the time of its birth, the mother says, "its flesh is now quite flabby." About twelve hours before the child died, convulsions came on, and recurred frequently until its death.

Examination of the body after death.

—*Thorax*: No disease of the thoracic viscera; the lining membrane of both auricles, especially the right, was very deeply tinged of a yellow colour. *Abdomen*: Intestines generally very much distended with flatus. *Liver*: Was, I think, larger than ordinary when at this age, possessing a firmer texture, and on being incised presented that peculiar striated appearance which, by some pathologists, has been termed the "nutmeg liver." On searching for the gall bladder, I found its place occupied by a small cellular bag, not larger in diameter than a common-sized goose quill, and about an inch and a half in length. A small cellular cord passed from its extremity, going to a similar one coming from the fissure of the liver, and passing in the usual way, as the ductus communis, to the duodenum. On making an incision into the upper part of the small bag, which I considered as the remains of the gall bladder, and introducing a blow-pipe, I could readily inflate it; but no air passed into what I considered the cystic duct; nor, on careful examination, could I ascertain that the hepatic duct was at all pervious, or (as will readily be supposed) any portion of the common duct. The mucous coat of the stomach was covered with a pale-coloured tenacious mucus; its texture appeared healthy. The duodenum contained a small quantity of imperfectly-formed chymous matter, of a pale whitish colour, not at all tinged with bile. Its mucous coat, as well as that of the jejunum and ilium, presented no appearance of disease. The *Colon* contained a quantity of matter, consisting of a mixture of coagulated milk and mucus, of a somewhat darker colour than that found in the small intestines, but not at all tinged with bile. On cutting into the kidneys, there flowed

from the infundibula and pelvis of the organs, a considerable quantity of opaque green fluid; and on pressing the mamillary processes the same kind of fluid was made to exude. The head was not examined.

It is to be regretted that permission was not given to examine the brain in this case; but as there were no symptoms of disease in the head until twelve hours before the child died, I cannot think that death occurred from disease in that organ. In the examination of the other cavities, no morbid appearances were found, save the state of the liver and biliary ducts above described, and these, taken in conjunction with the symptoms present during life, lead to the conclusion that death took place from this cause.

From the experiments of Sir B. Brodie, many years ago, as well as those subsequently made by Mr. Mayo, an inference was drawn, that an interception to the flow of bile into the duodenum rendered the process of chylification imperfect; and the former observes, that in every well authenticated case of obliteration of the common duct from disease, great emaciation has been observed. Tiedemann and Gmelin, while admitting the influence of the bile in assisting digestion, conceive that it has not so large a share in the formation of chyle as had been attributed to it; and set down the following proposition as established by their experiments: "Nul doute que la bile ne doit être considérée en grande partie comme une matière excrémentielle dont la sécrétion tend principalement à maintenir le sang dans un état de combinaison qui lui permette de servir à nutrition dans les differens organes."

In either view of the case, emaciation (as in the present instance) might be expected to result; in the one, from imperfect chylification; in the other, from an impure condition of the blood, rendering it unfit for nutrition. Both agree in the effect produced, though differing as to the mode in which it is accomplished.

Dr. Elliotson, however, in his *Physiology*, mentions two cases of a similar nature, in which it appears no such consequences resulted. In the chapter on the uses of the bile, there is the following note: Dr. Blundell has notes of the cases of two infants, four or five months old, in whom the hepatic ducts

terminated blindly, so that no bile entered into the intestines, and the stools were white, like spermaceti, and the skin jaundiced. But the infants had grown rapidly, and thriven tolerably, notwithstanding. No account, however, is given of the symptoms under which they laboured, nor from what cause death at last took place, so that there are no means of forming an opinion what was the influence of the lesion in question.

In the sixth vol. of the "*Archives de Médecine*," Andral relates several cases of complete obliteration of the common duct; in one, death ensued from rupture of the gall bladder; in another, from rupture of the hepatic duct; in a third, (a case of chronic jaundice) there was obliteration of the common and cystic duct, with atrophy of the gall bladder and liver. The subjects of all these cases were adults. Mons. Andral considers the obliteration to have been caused by inflammation and consequent thickening of the parietes of the ducts, followed by their transformation into ligamentous cords. As, in the instance above related, there were found the remains both of the gall bladder and the ducts, I am inclined to look upon it as a case of obliteration from the same cause. Moreover, as the infant was jaundiced when born, and the state of the parts seems to forbid the supposition that the morbid changes occurred subsequent to birth, may it not be considered as an instance of disease occurring to the fœtus in utero? The case therefore may not be thought uninteresting, first, as contributing to the pathology of jaundice in infants; second, as an addition to the cases of intra-uterine disease; and third, as showing the injurious effects of a complete obstruction to the flow of bile into the intestinal canal.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Practical Observations on Various Subjects relating to Midwifery. By JAMES HAMILTON, M.D. F.R.S.E. Professor of Medicine and Midwifery, &c. in the University of Edinburgh. 2d Edition, revised and enlarged. Longman, 1840. 8vo. pp. 425.

WHILE the last sheets of this work were passing through the press, the well-

known and justly esteemed author died, after an illness of only a few weeks' duration. Lamenting (as we sincerely do) the loss of Dr. Hamilton, who had always evinced great zeal in his profession, both as a teacher and practitioner, we are gratified in being enabled to state that this second edition of his "Observations" had been minutely and carefully revised by him, before the beginning of his short but fatal attack; so that this work may be regarded as his complete and parting legacy to the profession. Dr. Hamilton's object in publishing this work was to record those deviations from the established modes of practice in several ordinary affections of women, which the experience of nearly half a century had led him to adopt and recommend.

Prolapsus of the uterus is the subject of the first chapter. It is generally supposed that the mechanical cause of prolapsus uteri consists in a relaxed state of the ligaments which support the uterus. It might have been expected that our improved knowledge of anatomy would have corrected this erroneous opinion, but, as a proof that it has not, we may refer to the works of almost every writer, in which we find the old doctrine is implicitly adopted. Gardien* and Osiander† are of the same opinion as Dr. H.: they deny that the broad and round ligaments support the uterus in situ, and assert that the true cause of prolapsus is the softening and relaxation of the membranes of the vagina and of the cellular tissue which unites them to the linings of the pelvis. The treatment ordinarily pursued in cases of prolapsus, consists, in incipient cases, of confinement to a horizontal posture; application of cold to the loins, external parts, and vagina; injection of styptic liquors into the vagina; use of tonics; and in cases of long standing, the employment also of pessaries. Dr. Hamilton first objects to the horizontal posture. "Although it immediately relieves the uneasy feelings of the patient, the author long ago ascertained that it tends not only to impair the general health, but to aggravate the disease, by increasing the relaxation of the natural supports of the womb; and daily experience

has established the validity of this opinion." He objects also to the use of astringent injections into the vagina, and avers, that of the numerous cases of chronic enlargement of the uterus which have fallen under his notice, by far the greater number had been "unequivocally occasioned" by their use. This opinion is, we think, too strongly expressed. The suspicion, indeed, might arise, that the mischief referred to might be owing to styptic injections, but how it could be known that they "unequivocally occasioned" it, we can scarcely imagine. Dr. Hamilton recommends vegetable preparations, or diluted chloride of lime, or soda, as the only safe injections. To the use of pessaries, too, Dr. H. strongly objects, and, upon the whole, we have no doubt justly, although we cannot but think he a little exaggerates the inconveniences arising from their proper employment. He did not succeed in some attempts he made either by the introduction of stimulating substances into the vagina, or by surgical operation, in producing a cohesion between the sides of the vagina for the purpose of supporting the uterus, and thus mechanically relieving prolapsus. Finding, from repeated experience, the little confidence that could be placed in the usual modes of treating prolapsus, Dr. H. at length discovered a mode of supporting the uterus; which he says (and we can confirm the fact) is both effectual and safe. It consists in the use of a T bandage and a well-adapted cushion, so placed upon the external parts as to retain the uterus *in situ*. This bandage is to be worn whenever the patient is out of bed, as long as any symptom of the disease is perceived. It effectually relieves the unpleasant feelings, while it enables the patient to take walking exercise.

Polypus excrescence of the uterus.—Upon this subject, we only think it necessary to observe, that Dr. Hamilton appears to be imperfectly acquainted with the modern opinions and practice of the French and English surgeons in the treatment of polypus of the uterus. He objects to the use of the knife, and prefers the ligature. Excision, however, is now *generally* preferred by the best English and continental surgeons, and the preference rests upon the best of all possible foundations—abundant experience. Sir Benjamin Brodie

* *Traité d'Accouchemens*, t. i. p. 178.

† Osiander, *Diss. de Fluxu Menstruo atque Uteri Prolapsu*. Gott. 1803, 4 c. tab.; and also, *Die Ursachen und Hülfsmittel der unregelmässigen und Schweren Geburten*, by Osiander. Zweite Auflage, 1833. B. 3. s. 130.

has several times removed large polypi by excision, with perfect success. We saw Mr. Arnott remove a polypus, at the Middlesex Hospital, which completely blocked up the vagina, and which was nearly as large as a double-fist. Little or no hæmorrhage followed, and the patient was well in less than a month*. In several cases we have ourselves adopted the same practice, and with like success. Dupuytren operated by excision in two hundred cases, and *only twice* met with hæmorrhage to any extent, and in both cases it was quickly arrested by plugging the vagina. Let it not be supposed that we are contending for the perfect abandonment of the use of the ligature: in some cases the use of the knife, or rather the bistoury or scissors, would be quite impossible; as, for example, when the polypus is situated high up, and is of small size.

Enlargement of the ovary.—Confining ourselves to the opinions and practice which originated with Dr. Hamilton, or which he particularly insisted upon, we pass over many interesting practical remarks which this section contains, as to the origin and progress of ovarian enlargements. We quite agree with Dr. H. as to the difficulty, at least, of distinguishing ovarian disease in the early stages; and we could add cases which have occurred in our own practice, which were considered as ovarian tumors, but which we have no doubt were similar to that he refers to, in which an accumulation of hardened feces in the caput cæcum coli might have been mistaken for disease of the ovary. In modern times, the most respectable part of the profession have considered diseases of the ovary to be incurable. Dr. Hamilton admits that there are many cases of enlargement of this organ which admit only of palliative treatment; "but he can prove, by many living witnesses, that cases now and then occur where the disease is curable, not merely in its early stages, but after it has acquired such a magnitude as to require tapping." The use of mercury is condemned. "Adverting to the effects of percussion and of pressure, in chronic rheumatism, and knowing the influence of the continued use of the muriate of lime in indolent glandular swellings, he was led to the trial of these means. He

advises, therefore, that moderate and equable pressure of the abdomen should be made by means of a suitable bandage; that the enlarged part should be subjected, twice a day, to gentle percussion, and that a course of small doses of muriate of lime should be continued for at least several months." If pain or tenderness was felt on pressure, the daily use of the warm-bath was added. Dr. Hamilton assures us that this plan has been attended with much success in several well-marked cases. That the muriate of lime may not injure the digestive functions, a small proportion of the tincture of calumbo should be added. The formula used by the author is one part of tr. of calumbo to seven parts of the solution of muriate of lime; and of this the patient is directed to take a drachm, properly diluted, twice a-day. In the more advanced degrees of the disease, tapping becomes necessary, but cases are related which confirm Dr. H. in his opinion that this operation is not safe till the sac has acquired a certain degree of distension. Extirpation of enlarged ovary by surgical operation is objected to.

Evidences or signs of human pregnancy.—Dr. Hamilton "undertakes to prove, that both in the early and in the latter months of pregnancy, there are invariable signs marking that condition of the system." This sentence affords a striking proof of the very positive manner in which Dr. Hamilton was in the habit (we say this with every possible feeling of respect) of stating his opinions, however strongly they might be opposed to the almost united experience of the profession; for there are few, if any, practitioners, we believe, who would not require to substitute the word "generally" for "invariable," before they would acquiesce in the author's assertion. If, in the wide range of medical science, there is any subject upon which it behoves us to be scrupulously cautious in not assuming a positive knowledge, or power of discrimination, which we do not always possess, it is upon the question of the existence or absence of pregnancy: for upon the accuracy of our opinions upon this point, not unfrequently depend the character of the woman, the claim to property, the proper treatment of disease, and, in criminal cases (as where a woman pleads pregnancy in bar of execution), the preservation or destruction

* MEDICAL GAZETTE, vol. xviii. p. 261.

of the unborn child. We would not willingly add to the difficulties with which this delicate and responsible question is sometimes surrounded. We do not deny, that, for all common practical purposes, our means of determining the existence of pregnancy are very generally sufficient to lead us to an accurate conclusion. But we must deprecate the dogmatic confidence assumed by Dr. Hamilton; and in proof that we are justified in so doing, we refer to the various and well-known works on obstetrical subjects and medical jurisprudence; almost every one of which contains examples (and some of them very lamentable ones) of the danger arising from placing *exclusive* confidence in any of the signs or symptoms of pregnancy, until the process is so far advanced as to admit of examination by the ballottement or the use of the stethoscope. Dr. H. "has no hesitation in asserting that there are two circumstances which invariably attend pregnancy during the early months—viz. suppression of the catamenia, and a perceptible change on the surface of the mamma surrounding the nipple." All the other symptoms of pregnancy "ought to be disregarded." Now, briefly, with respect to those two "invariable" symptoms; for the subject has been too frequently discussed to justify us in entering into it at much length. The general belief of the profession amounts to this: that the symptoms referred to by Dr. Hamilton afford strong presumptive evidence of the existence of pregnancy, but that they do not amount to such a demonstration of the fact as to justify a man in swearing to it in a court of justice. That the menses may continue to flow during pregnancy, or (to guard against a verbal dispute) that such a periodical discharge may appear that cannot be distinguished from the menses, is the prevailing opinion of the profession, and our personal experience has afforded us several opportunities of knowing that the opinion is well founded. The areola around the nipple, it is admitted, too, is a very strong presumptive proof, but it falls short of a proof positive; and we must venture to object to the manner in which Dr. H. dismisses the opinion of Denman, of the areola being formed, in many of the complaints which resemble pregnancy, by the assertion, that it is quite inconsistent "with the observation

of every modern practitioner." We, among others, believe, that a true areola is sometimes formed around the nipple in cases of uterine disease or disturbance, and we refer especially to dysmenorrhœa.* At the same time we perfectly agree with Montgomery, that much of the discrepancy of opinion on this subject has arisen from want of sufficient care in observing, and accuracy in describing, the essential characters of the true areola. The evidence of pregnancy in the latter months, upon which Dr. H. relies, is the "distinct sensation of the occasional movements of the infant." We agree with him, that this sensation may, "generally," be distinguished by an attentive practitioner; but let us not forget the certain fact, that sometimes no motions of the child can be felt, by either the mother or the practitioner, at any period of pregnancy; and that sometimes, too, the most experienced accoucheurs have felt confident of distinguishing the motions of the child when the patient was not pregnant. To give one example: Dewees†, in the case of a young lady, who had all the usual symptoms of pregnancy, "thought he distinctly perceived the motions of the fœtus;" but it was ascertained afterwards, that the size of the abdomen, &c. depended upon an accumulation of menstrual fluid in the uterus. We cannot refrain from hinting, that Dr. Hamilton's definition of "quickening," which, in common with most writers and practitioners, he regards as the "first sensation by the parent of the motion of the infant," is liable to doubt and dispute. Many good authorities incline to the opinion of the late Mr. Royston, that "quickening," as it is called, is produced by the impregnated uterus starting suddenly out of the pelvis into the abdominal cavity, and that it is altogether independent of any motion of the child‡.

Upon the often debated, and still debatable question, of the duration of human pregnancy, Dr. H. agrees with the majority of his brethren, that the ordinary term may be, and is occasionally protracted, but he does not think himself entitled to give a decided opinion as to

* Cyclopædia of Medicine, "Signs of Pregnancy," vol. iii. p. 473.

† Essays on several subjects connected with Midwifery, p. 337. Montgomery, also, loc. cit. p. 478.

‡ Lyall's Evidence on the Gardner Peerage cause, Note, p. 68-9.

the period to which that protraction may be extended.

On the Management of the first stage of Labour.—In this section we meet with opinions and practical advice that would fairly justify a much more extended notice than we can possibly give. By the first stage of labour Dr. H. means, "all that happens previous to the complete dilatation of the os uteri;" and, because certain evil consequences "may" sometimes follow from the protraction of this stage, Dr. H. thought himself justified to "advise his pupils to secure the termination of the first stage of labour within twelve or fourteen hours from its actual commencement." If the protraction arises from premature rupture of the membranes, or "natural toughness of the os uteri," bleeding or opiate clysters are recommended, according to the state of the patient. If the resistance to dilatation arises from an "undeveloped band of the cervix uteri," the same means are advised; and, "half an hour after the opiate, pressure on the resisting band with the point of the finger during each successive pain." If protraction of the first stage of labour "depends upon such a relaxation of all the parts lining the pelvis, that the undilated uterus is, during every pain, forced down upon the external parts," it is only necessary, by the application of two fingers to the edges of the os uteri, to retain the uterus *in situ* during every pain till the head of the infant pass into the vagina." But the practitioner is guarded against any attempt "at forcing open the os uteri." A few other remarks are made, as to the mode of managing other kinds of protraction of the first stage.

Upon the whole, it is our decided opinion, that, guarded as is the advice of Dr. Hamilton, with respect to the management of the first stage of labour, and safely and judiciously as he, no doubt, was in the habit of acting upon it, if practitioners in general are influenced by it, that much more mischief than good must result; and that it would be much safer for a teacher to inculcate the maxim of Denman, viz. "whether a short or a long time be required for the purpose of dilating the os uteri, it is the duty of the practitioner to abstain from interfering in this part of the process."* Perhaps Dr. Hamilton's opinions were a little overstated, and severely commented

upon, when the first edition of his "Observations" was published; but Dr. Collins*, and Dr. Murphy†, of Dublin, advocate, we think, much safer doctrines than those of Dr. Hamilton upon the subject in question. The author's remarks on the management of the second and third stages of labour claim no formal notice.

In cases of adherent placenta, we are advised by most writers to insinuate the fingers between the placenta and the uterus, and gradually and carefully peel off the former. Now it is not so easy as may be imagined to distinguish the edge of the placenta from the uterus itself; and besides, as Dr. H. very correctly suggests, "there is hazard of exciting inflammation on the surface of the uterus by the pressure of the fingers." The plan advised by the author is at once easier and safer. It consists in pressing upon the substance of the placenta with the expanded fingers, bringing its circumference towards its centre, and detaching leisurely and carefully all that can be separated by this manipulation.

On Laborious Labours.—In this section many good practical remarks are made, which claim the attention of young practitioners especially. Dr. H. very properly "holds it to be a doctrine replete with great danger, that passions of the mind do not interrupt the progress of a labour." We cordially agree with him that no man can practise midwifery, with safety to his patients, and comfort to himself, who does not use his utmost endeavours to soothe the feelings and encourage the hopes of the suffering woman, whatever may be her rank in life. With respect to the egot of rye, the author is of opinion that it "can act in no other way than by influencing the imagination, and that it possesses no superiority, in this respect, over any other medicine." So we are inclined to think, and we have given it in forty cases, but yet we state our opinion upon the subject with becoming deference to the at least plausible affirmative evidence of others, in favour of the power of this agent upon the action of the uterus. Dr. Hamilton's remarks upon the use of the forceps, and the management of cases of disproportion between the infant

* Observations on the artificial dilatation of the mouth of the Womb during labour, &c. By Dr. Collins. Dublin Journal, March, 1837.

† Inquiry into the management of the first stage of Labour. By Dr. Murphy. Dublin Journal, May, 1837.

* Denman's Midwifery. Waller's edit., p. 135.

and pelvis, are marked by sound practical judgment, and although a little severe upon the practice of others, his strictures are, we think, well founded. We do not doubt that in embryotomy the crotchet is "a more powerful means" than the craniotomy forceps, but we should always prefer the latter instrument, on account of its much greater safety. Dr. D. Davis's osteotomist is thought to be of little practical value. Dr. H. speaks from much experience upon the subject of inducing premature labour in appropriate cases. He first tried the effect of separating a portion of the decidua from the cervix uteri, without rupturing the membranes. This practice he recommends with confidence. Out of 77 cases of premature labour, artificially induced by the previous rupture of the membranes, 33 infants were born alive. Of 58 similar cases, the membranes having been preserved entire, 51 were born alive. By the former practice, less than one-half of the children being saved; by the latter, more than seven-eighths were born alive. Thus then, are the objections of Velpeau* to Dr. H.'s operation, satisfactorily answered. In the management of preternatural labours, Dr. H. says that the first object is to determine how the infant can be best adapted to the pelvic passage. The prevailing doctrine is, that the fore part of the fœtus should be turned to the back of the mother. He agrees with Baudelocque, however, and evidently with sufficient reason, that in every case where the feet are brought down, the toes should in the progress of extraction be turned into such a position, that the belly, the breast, and the face, shall be made to pass in succession along the nearer sacro-iliac synchondrosis. As a general rule, we doubt the propriety of hastening the delivery of the child in footling cases, in the manner recommended by the author. By the plan proposed, the lives of more children may, no doubt, be saved; but we should fear for the safety of the mother. Dr. Denman's opinions upon the subject of spontaneous evolution scarcely required that Dr. H. should have raised "his warning voice" against practitioners being misled by their opinions. Denman has been misunderstood and misrepresented by many

others besides Dr. Hamilton, upon this point. A reference to the 1st and 2nd papers, published by Dr. Denman, in 1785;* to the 1st edition of his midwifery, in 1795; and the 7th edit. by Waller, will show that he went no further than to state, that the knowledge of the occasional occurrence of spontaneous evolution, (as it is called) might be some relief to the practitioner's mind, and prevent him from having recourse to hazardous operations, in those cases where turning either cannot be effected without danger, or where it is impracticable. Velpeau†, Blundell‡, Gooch§, &c., have also mistaken Dr. Denman's opinions upon this subject. We differ entirely from Dr. Hamilton, in his condemnation of the use of the plug in cases of uterine hemorrhage, in the latter months of pregnancy. His "important objection to the practice is, that from the condition of the uterus, after the seventh month of pregnancy, the blood discharged by the separation of the placenta, if prevented from passing per vaginam, may accumulate within the cavity of the uterus, and prove fatal." This is an oft-repeated and plausible objection to the practice of plugging the vagina in cases of hemorrhage; but it is nearly, if not entirely, an unfounded one; and let it be remembered, that even if cases had occurred of this accumulation of blood within the uterus, when the external flow was prevented, we should not be justified in abandoning the practice. Our means of arresting severe and fearful uterine hemorrhage are few, and none too certain; and we cannot resign that which we, in common with the majority of the most experienced practitioners of Europe, consider the most efficient, because it is liable to occasional failure. Even the possibility of the "important objection" advanced by Dr. Hamilton, is denied by many good authorities, as Dewees||, La Chapelle¶, Legouais**, &c. La Chapelle, certainly one of the ablest and most experienced practitioners in Europe, states that no such accident ever occurred at La Maternité, and that "le tamponnement†† est le seul moyen

* London Med. Journal, by Simmons, Vol. 5.

† Accouchemens, t. 2, 275.

‡ Practice of Osetetricky p. 384.

§ Midwifery, p. 238.

|| Midwifery, p. 422, 1st Edition, London.

¶ Pratique des Accouchemens, t. ii. p. 382.

** Dict. des Sc. Med, t. 54. p. 323.

†† Loc cit, 361.

* Accouchemens, ed. 2nd, p. 413.

qui puisse empêcher la femme de succomber immédiatement à la perte de son sang, quand l'état des parties rend inadmissibles toute tentative d'accouchement artificiel." Again too, we differ from Dr Hamilton in his condemnation of rupturing the membranes, as a means of arresting uterine hemorrhage. It is true that the discharge of the liquor amnii "may fail to check the hemorrhage;" but we cannot admit the second objection, "that it must increase both the difficulty and the danger of turning, should the agency of the case eventually require that expedient," because if such difficulty were created to the operation of turning, the hemorrhage would, almost to a certainty, be arrested. But upon this subject, as upon several others, Dr. H. appears to regard his speculative opinions to be of equal weight with the contrary opinions of the best practitioners, which are founded upon extensive experience. "During the last thirty years, the author has only met with two cases where he adopted this practice"—of rupturing the membranes. Not unnecessarily to accumulate evidence, we shall mention but two opinions, in which we perfectly coincide. Gooch* says that in his practice, hemorrhage never continued after the rupture of the membranes. Rigby† supports the practice by more than 60 cases. We think, with Dr. Hamilton, that the hitherto published evidence upon the subject of transfusion, in cases of alarming effects from hemorrhage, is, at least, very equivocal.

Convulsions during Pregnancy and Labour.—The author attributes his success, in the treatment of this always frightful and too frequently alarming disease, "entirely to the large bleedings" he adopted. He never directed less than about fifty ounces, by weight, to be drawn at first, "and if there were not a decided improvement within the hour," he advised the same quantity to be again subtracted. And further, "experience has taught him, in directing the first bleeding, to disregard peculiarity of constitution, for the most delicate persons require the same quantity to be subtracted as the most robust." We scarcely think it necessary to guard our readers against such a use of the lancet, without reference to the con-

stitution of the patient. We believe that such enormous bleedings can rarely be indicated, and can as rarely be justifiable. Upon this subject we may observe, that Dr. Collins, of Dublin, suggests, we believe, a novel and plausible mode of practice; viz., to keep the patient under the nauseating influence of tartar emetic after the first bleeding, and free purging with calomel and jalap. The volume concludes with a few brief remarks upon topics of comparatively minor practical importance to those which we have felt it incumbent to dwell upon.

In conclusion, we cannot refrain from remarking, that Dr. Hamilton's work is not exactly one we should place in the hands of a student of midwifery, although we admit that a well-informed practitioner, who is prepared to judge for himself, and to modify many of Dr. H.'s opinions by his knowledge of the best opinions of the day, may derive from it much useful instruction. An anonymous writer cannot fear the charge of plagiarism, but for the honour of the GAZETTE, we must observe, that if perchance any of our readers should detect a similarity of opinion, or the same tone of critical comment, in this notice, and that contained in another journal, that this is not the first time or place in which the present reviewer has performed the duty he now concludes, with the sincerest feeling of respect for the memory of Dr. Hamilton.

Specimen pathologiæ generalis veterum Græcorum. Scripsit SOPHOCLES AB ECONOMUS [ECONOMO], Dr. Medicin. et Chirurg. Berolini, 1833.

A specimen of the general Pathology of the ancient Greeks. By Dr. SOPHOCLES ECONOMUS. 8vo. Pp. 165.

THIS very learned treatise is the production of a young Greek, Dr. Σοφοκλῆς ὁ ἐξ Ὀικονόμων; and is a cento of the opinions of the ancient Greek physicians in physiology and symptomatology. It is always curious, often interesting, and sometimes instructive. We regret, however, that the author has not furnished his work with an index, or table of contents; for these appendages, which are always useful, become absolutely necessary in a book of this kind, which is to be consulted rather than to be read. The following passage may give our readers

* Midwifery, 257.

† On Uterine Hemorrhage.

some notion of the manner of this literary mosaic :—

“The quantity of blood may vary in two ways, by being either too great or too small. The augmentation in quantity may be twofold, either as regards the strength or the capacity of the vessels.^a Copious nutriment generally causes an abundance of blood.^b But when this abundance exists, the memory is dulled,^c convulsions arise,^d burning fevers break forth,^e and the arterial pulse is altered.^f

“When there is a plethora of blood with reference to the patient’s strength, it corrupts the humours, and sends a flux to the weaker parts;^g this kind of plethora arises from heat, anger, and fever.^h But a plethora of the vessels distendsⁱ and sometimes bursts them, producing death by obstruction of these strainers of the body.^j When the arteries are obstructed by blood, the body soon loses sensation and motion, the vital force beginning to be suffocated; wherefore Hippocrates has said, that in those who are suddenly struck dumb, this symptom arises from repletion of the arteries.”^k [This is a guess at the meaning of the original, which is here unintelligible: “quare Hippocrates dixit, qui derepente obmutuerit, arteriarum repletiones corpus lædunt.”]

“A deficiency of blood often occurs, whence the body becomes pale, and therefore Hippocrates places together the pale (*αχρόους*) and the exsanguine (*λειφάμους*).^l A deficiency of blood is caused by want of nourishment,^m wasting fevers,ⁿ &c.” (p. 39 40.)

^a “Id. [Gal.] Comm. ii. de nat. hum. t. i. p. 112. de cur. ration. per venaes. c. 3. p. 257.”

^b “Id. de plenitudin.”

^c “Id. Comm. i. de nat. human. t. 39.”

^d “Id. de loc. affect. L. iii. c. 8. p. 171.”

^e “Galen. de curat. per venaes. De diff. febr. L. i. c. ii. p. 279.”

^f “Id. Comm. i. de humorib. t. i. p. 45.”

^g “Id. Comm. ii. de natur. hum. t. i. p. 112.”

^h “Id. Comm. i. de humor. t. i. p. 10.”

ⁱ “Id. de optima, sect. c. xiv. p. 145.”

^j “Ie. de loc. affect. L. v. c. v. p. 338. Comm. ii. de nat. human. p. 112.”

^k “Id. de caus. morb. c. iii. p. 14. de bono habitu, p. 753.”

^l “See Foësius Oecon. Hipp. v. *λειφάμους*. An entire deficiency of blood is described by Lieutaud, (*Précis de la Médecine Pratique*, p. 72) and others: a most remarkable case of this kind is narrated in the *Edin. Med. Chirur. Trans.* for 1824, p. 174.”

^m “Galen. Comm. de vict. acut.”

ⁿ “Id. Meth. Med. L. x.”

MEDICAL GAZETTE.

Friday, May 29, 1840.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”

CICERO.

UNION SURGEONS.

THE more we look into the late report of the Poor-Law Commissioners, the more reason we see to deplore the oppression to which the Union surgeons are subjected. Complaints, whose justice is obvious, are heard from every part of England. In Devonshire and Cornwall, says Mr. Gilbert, “as regards remuneration, the general complaint from the medical men is that it is not sufficient*.”

Mr. Weale, who supervises parts of Beds, Bucks, Herts, Northampton, and Warwick, informs us, that, in the Newport Pagnell Union, the medical officers have complained of the inadequacy of the remuneration; he believes, that in the Towcester Union the medical officers have sometimes complained of the same thing; and says, that in the Walsall Union there is “a little grumbling with one—he who receives the greatest sum for his labours, and who would do so if he had more given.” No doubt he would, the cormorant! We make no question that he would take 100*l.* per annum—if he could get it. This reproof comes very pleasantly from an assistant-commissioner, with his comfortable wage of 1500*l.* a year. It reminds us of that scene in the *Duenna*, where Father Paul, after emptying his goblet, gives it to the starveling lay-brother; and on the latter endeavouring, but in vain, to suck out a drop, the lusty monk exclaims, “So, you sinful wretch, if there had been anything in it you would have drunk it!”

There is dissatisfaction in the Wol-

* Report, p. 169.

verhampton Union, "the present medical officers having presented a memorial soliciting payment by the case; which request the Board of Guardians have not seen fit to accede to."

In the Bromsgrove district of the Union of the same name, the medical officer's salary has been increased from 70*l.* to 90*l.* a year. In the Leighton-Buzzard Union, there would seem to be only one medical officer; he was originally engaged at 200*l.* a year, but this sum proving insufficient, it was raised, with the sanction of the Commissioners, to 230*l.* "*The time of the medical officer is devoted exclusively to the business of the Union, and he is not allowed private practice.*"

The Leighton-Buzzard district "is 55 square miles, extending in one direction eight miles from the surgeon's house" *.

It would be curious to ascertain how many hundreds or thousands of patients this devoted practitioner may have annually, and how much (if any) of his salary remains in his pocket when his drug-bill is paid. He has the advantage, however, of improving in the practice of medicine, and the arrangement is probably more satisfactory, both for him and the poor, than the ordinary method. It is clear, nevertheless, that he is worse off than the resident apothecary of a Dispensary, with a salary of sixty pounds.

Mr. Tuffnell answers for Kent and Sussex. In the East Ashford, Bridge, Gravesend and Milton, Malling, Tonbridge, Eastbourn, Hailsham, Lewes, and Ticehurst Unions, the medical officers are dissatisfied with their remuneration. In the Bromley Union, says Mr. Tuffnell, there is no dissatisfaction as to the medical arrangements; "but an application has been made by the medical officer for an increase of remuneration,

which is now (April, 1839) under the consideration of the Board." And in the Thakeham Union, one medical officer is discontented both "as to the amount of remuneration, and as to the *tender* mode of election." On the other hand, in the Isle of Thanet Union, the Guardians "considering the salary for attending at the workhouse much too large, have resolved to reduce it by £30."

It would be gratifying a liberal curiosity if Mr. Tuffnell would inform us what this salary is, which seems so large in the Isle of Thanet; is it £120 a-year? or even less than that? In the whole volume before us there is only one instance where the surgeon seems really to have got a small prize, and that is in the Penrith Union, where according to James Shaw, the clerk, one officer will have received £25 for a year, in which he had only one trifling case.* This is the single prize in a medical lottery of a thousand blanks, and clearly depended on some peculiarity of circumstances which the writer has not explained. The mere discontent of the Guardians at the amount of a surgeon's remuneration is by no means a *prima facie* evidence that it is either exorbitant or sufficient; for the constant underpayment of medical officers has habituated those who pay the salary, as well as those who receive it, to a scale far below any approximation to justice. At p. 273, for instance, Col. Wade, one of the Assistant-Commissioners, speaks with disapproving wonder of a Union, where "the medical expenditure for the current year has been increased from £700 to £1200! at 11*d.* per head on the population." This rate of eleven-pence a head seems to the frugal Colonel the very height of extravagance: let us soberly calculate if it be so, really. The British Medical Association propose, reasonably enough, that the average population of

* Communication from the British Medical Association, in Report, p. 281.

* Report, p. 211.

medical districts should be 2500; at 11d. per head, such a district would produce its surgeon £115 per annum; a sum which though it makes the military economist stand aghast, does not strike us as so eminently regal.

On the important point of medical relief, the fautors of the new act may be divided into two principal classes. The one consists of stark-mad Malthusians, who would rather be mortified by the Union surgeons performing their duties with great diligence, as this would put off the millennium of no-relief, and frustrate the attempt to worry the poor into penny clubs.*

The second class is made up of those who have no strong objection to the relief of the sick poor, provided it can be procured for nothing, or next to nothing. The cry of Union surgeons for real salaries, instead of sham ones, seems to them quite preposterous. They would scarcely object to the officers prescribing mutton and porter for the diseased and starving, were it not that they cost something. Like the Harpagon of Molière, they have no positive hostility to the good cheer; but only the price of it. "Que diable! toujours de l'argent! Il semble qu'ils n'aient rien autre chose à dire; de l'argent! de l'argent! de l'argent! Ah! ils n'ont que ce mot à la bouche, de l'argent! Toujours parler d'argent! Voilà leur épée de chevet, de l'argent!"* In the present volume there is a report by Mr. Tufnell, on the education of pauper children, in which he gives numerous instances of the astounding ignorance of the workhouse schoolmasters; but shrinks from the natural remedy, that of having a tolerable master in each union, as too expensive. His proposal, therefore, is to unite the

children of many Unions into one big central school, where they are to be made very perfect at the smallest possible cost. As to the objection founded on the cruelty of the thing, on the hardship of depriving the indigent inmates of a workhouse of their last remaining consolation, by the removal of their children, our readers may easily imagine that it is treated with sufficient disdain. Such an objection, indeed, could only proceed from minds quite ignorant of the principle of population, the philosophy of destitution, and the certain method of dispauperizing the community!

To return to the Union surgeons: Sir John Walsham, who is the viceroy of Northumberland, Cumberland, Westmoreland, Durham, &c., speaks of the dissatisfaction of the medical officers with the remuneration in the Hexham Union; and in the Houghton-le-spring Union the guardians actually offered salaries so minute, that they were thought too small by the Commissioners and Sir J. Walsham! Why are not these salaries set before us in figures? The numerical method grows in favour daily, and these Houghton-le-Spring offers would be a contribution to what we should call, in modern phrase, the statistics of shabbiness. It is to be observed, too, that practitioners were found to accept them.

In Mr. Day's district, Salop and North Wales, the discontent of the medical officers with the amount of remuneration is very frequent. In the Carnarvon Union, we are told that "dissatisfaction exists very generally in the Carnarvon district of this Union; some of the parishes being beyond the Menai, cannot be reached in stormy weather. The medical officers are dissatisfied with the rate of remuneration, and the poor complain of a want of proper medical attendance." Sir Edmund Head answers for Gloucester, Hereford, &c. In several instances the surgeons complain of the

* This happy era of untended sickness may arrive very soon if the humane do not keep up what Mr. Tufnell calls the "outcry." "I agree in opinion," says Col. Wade, "with those who would gradually withdraw medical relief from the lower orders."—Report, p. 255.

† *L'Avare*, Acte iii., Scène 5.

insufficiency of their salaries, and in others the districts are thought too large. Mr. Clive, who is assistant-commissioner for Norfolk and Suffolk, is adverse both to the poor and to the surgeons. He thinks that "medical relief is the connecting link between independence and pauperism," and fancies that the salaries of the surgeons would be sufficient, if orders were not given so profusely. (p. 238.)

So that a poor cottager, after lavishing his health and strength in creating wealth for his employers, is to be left to his penny club for medical attendance. But suppose he does not belong to a club? Why, then, he must go into debt with any surgeon willing to trust him; and the calculation how many years it will take to pay a bill of 3*l.* 7*s.* 9*d.* with the savings out of nine shillings a week, will be a fine cordial in his nervous fever. Or, what do you think of the loan system, gentle reader? Perhaps you never heard of it: it is as follows:—The guardians are empowered, under the new act, (that blessing in disguise,) to give relief to the sick poor, and afterwards recover the amount by attaching the wages in the hands of their masters. This "relief by loan," is Col. Wade's hobby; he thinks that, in conjunction with contracts per case, it is admirably adapted to lead to the total withdrawal of medical relief. The loan system, however, must be "of easy application." But, alas! he is obliged to confess that, as far as his own experience goes, no part of the law has worked so ill as that relating to the recovery of loans. The thought of such a process as attaching the wages of an underpaid and underfed labourer for a parish debt, fills every decent person with disgust; and, accordingly, there is a universal conspiracy against the law. Farmers, guardians, officers, and auditors, all set their faces against this bright scheme to take bread from the hungry;

and, worst of all, there is even a "reluctance of the magistrates to lend their assistance;" so that one of the prettiest clauses in the whole act is little better than waste paper. It would appear that two hundred and forty years of public charity have not been without effect on the tone of public feeling, and that Englishmen are not yet ready to go all lengths against the poor. This will require much time, and many more reports. *Nemo repente fuit Malthusius.*

DR. CAPE.

ST. THOMAS'S HOSPITAL.

At a meeting of the students of St. Thomas's Hospital, which was held on Tuesday, May 19, 1840, it was unanimously resolved—"That a letter be addressed to Dr. Cape, expressing the great dissatisfaction entertained by this meeting with regard to certain articles, calculated to prejudice his character as a teacher, which have appeared in the *Lancet* and other periodicals of last week; and to assure him of their continued confidence, respect, and esteem.

"2dly. That the chairman be requested to transmit a copy of this resolution to Dr. Cape, the *MEDICAL GAZETTE*, and the *Lancet*."

(Signed) CHAS. W. KENT, Chairman,
and forty of the Students.

In conformity with the above resolutions, the following letter was sent to Dr. Cape:

SIR,

I HAVE the honor to transmit to you the resolutions unanimously agreed upon at a Meeting of the Pupils of St. Thomas's Hospital on Tuesday last, and respectfully to express to you their high approval of the line of conduct which you thought it your duty to pursue during the contention to which these resolutions refer; which course they feel convinced tended both to the honor of the school and dignity of the chair of midwifery,

I beg to assure you that so far from their confidence and esteem being in the least diminished, the manner in which you have acted in this affair has greatly contributed to the increase of both.

I remain, sir,

Yours respectfully,

CHARLES WELLINGTON KENT.

1, Duke Street, London Bridge,
May 20, 1840.

ROYAL COLLEGE OF SURGEONS IN LONDON.

THE President and Council have great pleasure in announcing to their Members, that three Studentships in Human and Comparative Anatomy have been instituted by the College, to be held respectively for the term of Three Years, with the annual stipend of One Hundred Pounds attached to each Studentship; and that, at the instance of the Director-General of the Medical Department of the Army, the Physician-General of the Royal Navy, and of the Chairman of the Honourable East India Company, the General Commanding the Army in Chief, the Lords Commissioners of the Admiralty, and the Court of Directors, have, with the view of promoting the objects of the College, been pleased to place at the disposal of the President and Council an Assistant-Surgeony, in each service, once in three years, for such of the said Students as may be considered worthy of these honourable distinctions.

The President and Council have also the pleasure to announce, that, with the view of rendering the prizes granted by the College more worthy of competition amongst their younger members, they have augmented the Collegial (Triennial) Anatomical Prize from thirty to fifty guineas; and have added ten guineas to the like sum, allotted by its founder, to the Jacksonian (Annual) Surgical Prize.

(By order) EDMUND BELFOUR,

Secretary.

May 18, 1840.

BOOKS RECEIVED FOR REVIEW.

The Anatomy of Suicide. By Forbes Winslow, Member of the Royal College of Surgeons, London.

Rapport sur l'emploi des Eaux Minérales de Vichy dans le Traitement de la Goutte, lu a l'Académie Royale de Médecine, dans sa séance du 24 Mars 1840, en nom d'une commission, par M. Patissier, Membre de l'Académie Royale de Médecine. Suivi d'une réponse à quelques allégations contre la dissolution des calculs urinaires, par Charles Petit, Docteur en Médecine, inspecteur-adjoint des eaux de Vichy.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, April 30.

J. K. Sampson, Hailsham, Sussex.—J. Appleton, Falmouth.—T. Bennet, Wimborne, Dorset.—J. Dutton, Lymington, Hants.—J. Churchill, Chertsey, Surrey.—H. Wills, Easton, Lincolnshire.

—R. S. Bowker, Appleby, Derbyshire.—T. Smith, Cockermouth.—C. H. Carter, Marlborough, Wilts.—R. Williams, Dolgelly.—I. C. Cust, Barnard Castle.—T. Graveley, Cowfold, Sussex.—R. Whitall, Knigton, Herefordshire.—W. Arden, Gresham, Norfolk.

Thursday, May 7.

W. C. F. Brookes, London.—G. Gillett, London.—W. Lloyd, Lampeter, Cardiganshire.—R. S. Wise, Banbury, Oxfordshire.—O. King, Petersfield, Hants.—Robert Parson, Haslemere, Surrey.—J. Watson, Norwich.—Henry Andrew, Truro.—E. Riggall, Gayton, Lincolnshire.—R. R. Sewell, Essex.—C. G. Ma shall, Kettering.—H. Bateson, Lancaster.—W. Fullford, King's Langley, Herts.—Richard Cross, Sherburn, Scarborough, York.—W. H. Scales, Plymouth, Devon.—G. S. Parkinson.

Thursday, May 14.

Richard Thomas, York.—William John Ward, Clifton, Bristol.—Andrew Dyer, Trowbridge, Wilts.—Samuel Parker, Sheffield.—Thomas Clover Pyman, Witham, Essex.—George Woodcock, Leicestershire.—Edward Meade, Princes, Rishorough.—Henry Taylor, Nottingham.

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, May 26, 1840.

Abscess 1	Fever, Intermittent, 1
Age and Debility 21	or Ague 1
Apoplexy 2	Hæmorrhage 1
Asthma 2	Heart, diseased 1
Cancer 1	Hooping Cough 5
Childbirth 1	Inflammation 8
Cholera 1	Bowels & Stomach 1
Consumption 38	Brain 4
Constipation of the	Lungs and Pleura 6
Bowels 1	Liver, diseased 1
Convulsions 18	Measles 1
Croup 2	Mortification 1
Diabetes 1	Small-pox 2
Dropsy 5	Spasms 1
Dropsy in the Brain 5	Stone & Gravel 1
Dropsy in the Chest 1	Worms 1
Epilepsy 1	Unknown Causes 58
Fever 8	
Fever, Scarlet 10	Casualties 5

Increase of Burials, as compared with }
the preceding week } 33

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

May.	Thermometer.	Barometer.
Wednesday 20	from 31 to 59	29.96 to 29.95
Thursday . . 21	36 55	30.07 30.16
Friday . . . 22	40 59	30.21 30.25
Saturday . . 23	34.5 61	30.23 30.15
Sunday . . . 24	51 68	30.09 29.96
Monday . . . 25	54 64	29.73 29.80
Tuesday . . 26	42 57	29.72 29.84

Wind N. on the 20th and two following days; S.W. on the 22d and two following days. On the 26th S.W. in the morning, and N.W. in the afternoon.

Except the mornings of the 21st and 23d generally cloudy; rain fell on the 20th, 24th, and two following days.

Rain fallen, .165 of an inch.

CHARLES HENRY ADAMS.

WILSON & OOLIVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JUNE 5, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

FRACTURES—continued.

*Ulna—Olecranon and Coronoid processes—
Carpus—Metacarpus—Phalanges—their
Causes, Symptoms, Diagnosis, Prognosis,
Treatment—FEMUR—Inferior Extremity
of Femur—Separation of the Epiphyses—
Great Trochanter—Lesser Trochanter—
Neck—Their Symptoms—Diagnosis—Prog-
nosis.*

THE ULNA.

Fracture of the ulna is more rarely seen than that of the radius; but, like it, the fracture is usually seated near the inferior extremity of the bone, where it is thin and superficial: it may, however, affect the olecranon and coronoid process. When it affects the body of the bone, it is almost always direct, and produced by a fall, in which the bone has come against some angular body, and there is usually little displacement. The inferior fragment is, it is said, drawn into contact with the radius by means of the pronator quadratus; the superior fragment, firmly connected by its hinge-like articulation with the humerus, remains in its ordinary position.

This fracture, whatever part of the shaft of the bone it occupies, is easily detected; all that is necessary is to pass the fingers along the border of the bone at the point of fracture, when we shall feel an inequality, caused by the projection of the superior extremity, and a depression, caused by the inclination of the inferior extremity

of the bone, towards the radius; add to this, mobility and crepitation, easily produced by grasping the two fragments, and moving them backwards and forwards, and we have the prominent signs of fractured ulna.

Treatment.—In reducing this fracture, we follow the same course as in the radius, except that, when the fracture is near its inferior extremity, in making extension, we incline the hand towards the radial side: the after apparatus is similar in principle to that of the radius

OLECRANON.

The ancients did not bestow much attention upon fractures of the olecranon; they have left very few remarks on the subject. Its situation particularly exposes it to injury, and its connections to violent muscular action; but the great majority of fractures are a consequence of direct injury—such as a fall on the elbow; still there are a few cases on record in which the fracture was occasioned by the violent contraction of the triceps in: throwing stones, for instance.

The fracture may affect any part of this process; may be simple or compound; may be transverse or oblique; with or without contusion or injury to the joint. When the fracture is transverse, there may be considerable displacement, occasioned by the triceps drawing up the superior fragment; at the same time, by the action of the flexor muscles, the arm assumes the semiflexed position, so that the inferior fragment is also removed. If the fracture be situated at the base of the process, the ligaments described and figured by Sir A. Cooper, which pass from the olecranon to the coronoid process on one side, and on the other to the coronary ligament of the radius, may prevent any displacement.

This fracture is usually easily detected: the patient has fallen or received a violent blow on the elbow, or the forearm has been

violently extended, and acute pain, with a crackling sensation, have been experienced at the part; the elbow is swelled and painful, the forearm is semiflexed, and cannot be extended. At the back of the elbow there is usually a depression, large enough to admit the point of the finger, limited above and below by the two extremities of the bone. When we extend the forearm, carrying the arm backwards, and push down the superior fragment, we may bring them into contact, cause the disappearance of the depression, and produce crepitation. If, however, the tumefaction be great, these things are not easily done; and there is then some danger of mistaking the accident for luxation.

Treatment.—To reduce it, the olecranon must be pushed down and maintained in that position; the inferior fragment is brought nearer by extending the forearm, but the extension should not be complete, or the fragments will only be in contact at their posterior surface, and an interval will be left between them anteriorly: the callus may then interfere with the motion of the joint. It is for this reason that many surgeons place the limb in a semiflexed position. The upper fragment must be kept down, which is not always easily done, because the triceps muscle glides under the apparatus which may be employed for the purpose, and carries the bone with it. After placing the limb in the position we have named, a bandage is rolled from the hand to just below the elbow; the olecranon is then pushed down towards the ulna, the bandage is rolled above it, and it is thus secured. Mayor's plan is simple: he keeps the arm extended.

Complete extension is certainly the position most favourable for bringing the fragments together, but it is with difficulty supported, and is apt to leave stiffness at the joint. Dupuytren and Sir A. Cooper advised the employment of this position. Camper, Desault, Earle, Boyer, prefer a slight flexion. Those who prefer extension have suggested means for maintaining reduced the superior fragment. Wardenburgh placed the arm in supination. Bottecher placed a kind of bracelet above the superior fragment, this bracelet being kept down by tapes attached to the base of the index finger. Feyter fixed the bracelet by means of a glove: in both, the arm was extended. Among those who object to extension, some prefer semiflexion, others flexion at an obtuse angle.

Seventy or eighty days are necessary for union by bone, but if so long persevered in, motion must be carefully impressed upon the joint, otherwise it is most probable ankylosis will be the consequence. This motion should not be deferred beyond the twentieth to the thirtieth day.

Fractures of the olecranon are not generally consolidated like other bones; the medium of union is commonly fibrous, that is, not because of any peculiarity of the bone, but because contact has not been properly maintained; this is proved by the experiments of Sir A. Cooper and Mr. Gulliver; but even if the union be fibrous, the limb loses little either in power or activity, the action of the triceps is transmitted through it like a tendon.

CORONOID PROCESS.

Once on the living and once on the dead, Sir A. Cooper saw fracture of the coronoid process. In the latter case the fracture was old, and the fragments were united by ligament; he inclines to the opinion that union would always be so obtained. In the former case, it was produced by a fall on the palm.

In this fracture, when the forearm is extended, the olecranon projects backwards, in consequence of the displacement of the ulna, but this disappears when the arm is semiflexed. In the treatment of this injury, the surgeon must bear in mind that a fibrous union is all he is likely to get, and he must endeavour to make the medium as thin as possible. For this purpose Sir A. Cooper advises flexion and perfect rest for three weeks.

CARPUS.

Fractures of the carpus are always produced by direct and violent injury, and the soft parts are usually severely damaged: these injuries are not often so great as to require amputation, but the consecutive effects are often very serious. In some cases, motion at the part is not interfered with, but in many, flexion and extension of the wrist are entirely lost; whilst in others, the flexor or extensor tendons become implicated in the cicatrix, following the wound, and motion is still further impeded. The symptoms which indicate the kind of injury which has happened, are deformity and crepitation, but the latter symptom is often wanting.

Treatment.—If there be no wound, the treatment consists in the application of such an apparatus as is used in fractures of the forearm, the apparatus being, in the cases we are considering, extended to the hand. If the injury to the soft parts be great, this must be particularly attended to, and if the bones be shattered, we must to some extent put out of sight the question of reduction, and occupy ourselves with extracting spiculae, relieving tension by incision, if necessary, and endeavour to prevent the development of severe inflammatory action at the point; and the most complete immobility must be maintained.

METACARPAL BONES.

Fractures of the metacarpal bones are not

very frequently seen, because these bones support each other in resisting violence; the fifth suffers more frequently than the others; but if the first did not by its mobility escape the action of the causes of fracture, it is likely it would be oftener fractured than any. They are produced by gun shot, by wheels passing over the hand, or by other direct violence; they have been fractured by a fall on the extended hand. They may be simple or complicated, and the displacement is usually not great. If reduction be necessary, extension is made by drawing at the corresponding finger, whilst counter-extension is made at the wrist; compresses are placed over the point, and upon them, two narrow splints, one on the palmar, the other on the dorsal surface; consolidation is completed by the fourth week, but it is rarely free from deformity. If the fracture be a compound one, it may be necessary to relieve tension by incision, and to remove spiculæ of bone. If the fracture extend to several bones, and the injury to the soft parts be great, amputation is sometimes required. If the ordinary apparatus be found inconvenient, it may be found convenient not to extend the splints beyond the first phalanx, leaving the last two free and flexed. I place a thick pad upon the fracture behind, and another in front, upon the head of the fractured bone, where it articulates with the first phalanx.

FINGERS.

Fractures of the phalanges of the fingers are always complicated by contusion, sometimes by wounds; the inferior fragment is displaced in the direction of the bone, in the sense of flexion. They are easily detected by the mobility of the fragments, crepitation, and by the deformity which results from the inclination forward of the inferior fragment. If simple, these fractures are comparatively unimportant; complicated with wounds or comminution, inflammatory or nervous accidents may result.

Treatment.—Reduction is generally easy, by means of extension and counter-extension; the finger may then be rolled, and two small splints, one on the dorsal, the other on the palmar surface, should be applied: when this is done, the bandage should be passed around the finger on each side of the injured one; they will thus form two lateral splints. Even when there is much complication, a cure will frequently be obtained: thus, when it is a question of a first or second phalanx, we should not lightly decide on amputation; we frequently save fingers where the connection with the living body is very small. The cure of a simple fracture of the phalanges has taken place in the fourth or fifth week; a compound fracture requires a longer treatment.

THE FEMUR.

Well as the thigh bone is surrounded by muscles, it is frequently the seat of fracture; this is accounted for by its great length, by its curvature, and by the considerable efforts it has to sustain, under a variety of circumstances. It may be fractured at different points, but its middle third and its neck suffer most frequently. In some instances, particularly in children, the fracture is transverse, in others it is oblique; and in the latter case reduction is less easily maintained, and the chances of deformity are greater than in the former. The fracture may be simple or comminuted, complicated by contusions, wounds, or other injuries.

We must consider separately fractures of the extremities, the shaft and the neck of the femur. The *shaft* of the femur may be fractured by direct and indirect violence, by a blow, by a wheel passing over it, or by a fall from a height. It is recognised by a sudden acute pain at the moment of the accident; the patient cannot move the injured limb, an unnatural mobility can be detected at some point, crepitation can generally be distinguished, and the limb is deformed; it is changed in length, in thickness, and in direction. In the greater number of cases there is displacement of the fragments, so that the limb is shorter than the sound one, and its bulk is increased in proportion to the shortening. In children, the muscles have less energy, and the displacement is usually not great. Usually, the inferior fragment alone is displaced, and glides upon the superior, which remains in its natural position.

The large muscles, which on the one part are attached to the pelvis, on the other to the lower part of the thigh, the patella, the tibia and fibula, are, to a certain extent, the cause of the shortening; the pelvis being their fixed point, they force upwards the inferior fragment. Of course the displacement may be increased by position in bed, or by other causes; the muscles become more irritated by this, and still further contract, so that the riding of the fragments is increased. Transverse fractures are less subject to displacement in the length of the limb, because the two fragments mutually sustain each other, but laterally they may suffer considerable displacement. Still the situation of the fracture has much influence upon the position of the bone; when it is below the lesser trochanter, between that point and the end of the upper third of the thigh, then the superior fragment, which, when the fracture is lower almost always retains its place, suffers a displacement outwards and forwards as much greater as the fragment is shorter; it yields to the action of the muscles attached to the lesser trochanter; the lower fragment being acted on in the

way we have just mentioned, so that the limb is much more deformed and shortened than in other cases. When the fracture is seated just above the condyles, the inferior fragment is drawn backwards by the action of the muscles of the calf, the projection is felt in the popliteal space, and the form of the knee is much changed.

The *prognosis* of fractures of the thigh is always unfavourable, to this extent, that it is extremely rare to obtain a cure perfectly free from deformity; but when the middle half of the bone is affected, the risk of this is least. However well imagined the means we may use, it is almost impossible to prevent riding where the fractured surface is oblique. Where there are complications, the prognosis is more unfavourable; probably the most dangerous complication is a gun-shot fracture, the ball passing through the thigh. The cases of cure under those circumstances are comparatively few.

Treatment.—Many modes of treatment are employed in cases of fractured thigh. In one the knee is flexed, and the limb laid on its side; in another, the leg and thigh are maintained, in a state of flexion, on a double-inclined plane; in a third, the limb is rigidly extended; in a fourth, the limb is suspended above the bed. In our own country, the two first methods, variously modified, have been commonly employed; the third is generally used in France; the last is the plan of Sauter and Mayor: it is not much used, but in complicated cases has many advantages.

Whatever may be the plan of treatment adopted, the first indication is to reduce the fracture, so that the length and direction of the limb may be natural; and, unless there be much irritation, to excite spasmodic action: this is generally easily done; and even when this action exists, a large bleeding, or nauseating doses of tartar emetic, will usually subdue it. In many cases even these means may be dispensed with, and yet the object be attained, by suddenly directing the patient's attention to some other subject. If difficulties arise, we may neutralise muscular action by simple extension, maintained until the muscles are tired: we may accomplish the object by semi flexion, or by associating with it traction. If we adopt the first plan, the patient is placed upon a bed; counter-extension is made by passing a well-padded band between the thighs, and securing it to the bed post, or to a ring in the wall; or by grasping the pelvis: the foot is grasped, and slow graduated extension made, first in the direction of the inferior fragment, then in that of the limb, until it has assumed its accustomed length and direction.

In considering particularly these modes of treatment, we shall begin with the semi-

flexed, which owes its celebrity to Pott. It seems evident that he mistook, or did not exactly comprehend, the advantages of the straight position, and that, in exaggerating the good of relaxing the muscles of the limb, he lost sight of the serious inconvenience of the semi-flexed position. We cannot place the limb in such a position as will relax all the muscles of a limb. There can be no question that it would be desirable to attain such a condition if possible; but what is the position in which these organs may be all equally relaxed?

No one can be ignorant of the fact, that if we bring nearer together the insertions of certain muscles, we produce tension of their antagonists. Pott recommended that the thigh should be laid on its outside; that the body should be inclined to the same side; that the leg should be semi-flexed, so that it, as well as the foot, should rest on the outside; a large, well-padded concave splint should be laid under the thigh, from the great trochanter to the knee; another splint is laid on the inner side, from the groin to the knee, and secured there by means of the eighteen-tailed bandage; and in this state the limb is left until the fracture is consolidated. Pott's plan was, to place the leg and foot on a higher level than the thigh; but this position forcibly rotates outwards the condyles of the femur. If the bed be a common one, the body is soon in a hole, and the leg too much raised. Samuel Cooper believes that this position is a frequent cause of deformity, the foot being inclined outwards after consolidation. In France, this method has found little favour: the objections raised are, the impossibility of comparing the two thighs, to ascertain whether consolidation is going on properly; the discomfort of the position when long continued; the pressure upon the great trochanter; the derangement occasioned by defecation; the difficulty of preventing movement in the limb; and the impossibility of employing it when both thighs are fractured.

Sir C. Bell's plan, as modified by Earle, has been a good deal used. The limb is placed on a double-inclined plane; a long splint is placed on its outside, from above the great trochanter to the knee; a corresponding splint is placed on the inner side, and the foot is sustained by a board. There can be no question that this kind of semi-flexion is borne much more easily than extension; the inferior fragment is less likely to rotate outwards; and, if the limb be properly fixed, sufficient extension may be made.

Dupuytren proposed another method, by which semi flexion was combined with extension. He formed a double-inclined plane with pillows; he so arranged it that the buttocks of the patient should not rest

on the bed; the limb was surrounded by a tail bandage; two splints extended from the pelvis to the knee; the leg was secured to the mattress; and being thus fixed, the pelvis, not resting on the bed, was making constant extension. This plan of Dupuytren's, however, is open to many obvious serious objections, which do not attach to the principle as carried out in the plans of Sir A. Cooper, Smith, Amesbury, Sauter, or Mayor.

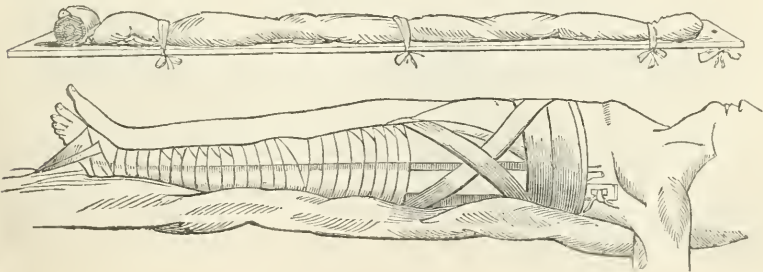
Advantageous as this plan is by many conceived to be, it has not been much employed in France. They prefer the method indicated by Hippocrates, and practised by the Greeks—extension; and a feeling in its favour is increasing here. Many means have been used for keeping up extension; and of those, the method of Desault has been most extensively employed. An unyielding bed is prepared, and the patient is laid on it. Under the affected limb a piece of linen is placed; it must be as long as the limb, and wide enough to allow splints to be rolled up in it. Under this cloth a tail-bandage is placed from the upper part of the thigh to the foot. The splints must be two in number; one, outside, extending from the iliac spine to four inches below the foot, and the other, inside, from the tuberosity of the ischium to the foot: sometimes a third splint is placed in front, and extends from the groin to below the knee. Compresses are placed three-fourths around the thigh; three cushions separate the splints from the thigh; the whole is secured by five or six tapes or bandages. A bandage is then brought either around the pelvis, or between the thighs, and firmly fixed to the notch at the summit of the outside splint; the foot is firmly fixed to the inferior extremity of it, and the limb is sufficiently extended: by this means the lower fragment is kept down, the superior fragment is kept up. The apparatus is daily examined, and the bands tightened if necessary. Every eighth day up to the thirtieth the apparatus is removed to ascertain that the reduction is exactly maintained. By the fiftieth or sixtieth day consolidation is usually complete in the adult; in old persons not so soon; in chil-

dren by the fortieth. Before the apparatus is removed it is necessary to ascertain that there is solid union; if it be so, the limb should be surrounded by a roller to prevent œdema, but the patient should not get up for three or four days, and when he begins to use the limb it should be cautiously done. Such was the apparatus of Desault, which completely accomplished his wishes—to make the foot, the leg, the thigh, and the pelvis, a whole.

However well applied the apparatus may have been, if the fracture be very oblique, the fragments may ride, and the shortening may be considerable. To obviate this shortening, many surgeons employ continued active extension, and this is variously applied. Extension was made by the Arabs, by attaching two bands to the knee or foot, fastening to their other extremity a weight, which is carried over the foot of the bed, and constantly dragging upon the limb. Counter extension was made by passing a band between the thighs and fastening it the head of the bed. Active extension has also been made by means of sliding splints.

The modifications made by Boyer in Desault's plan are not great; and the modifications more recently made in the long splints in no wise improve the principle so steadily kept in view by Desault, though in detail they offer considerable advantages. Of these the simplest and most effective I know is that used by Dzondi, Gibson, Nicolai, and Liston. It consists of "a deal board, of a hand's-breadth for an adult. It should extend from opposite the nipple to three, four, or five inches below the sole of the foot; it is perforated at the upper end by two large holes, and fastened by two deep notches at its other extremity. A sufficient hollow or perforation is made opposite the ankle, a pad of corresponding breadth is attached by a few pieces of tape; a roller is split at the end, and then tied through the openings in the top part of the splint, unrolled so far, and fixed for the time to the lower end of the pad. The apparatus, thus prepared, is here represented, before and after application.

Figs. 1 and 2.



"The reduction accomplished, and the position preserved by an assistant placing one hand over the dorsum of the foot, and the other upon the knee, a narrow roller is turned from the toes to a little below the fracture, with moderate firmness, to prevent œdema; a perineal band, consisting of a large soft handkerchief, or shawl, with some tow or wadding rolled in it, is placed under the patient. The splint is then laid along the outside of the limb; the roller, already spoken of, is passed under the sole of the foot, and turned around the ankle and heel, previously well padded, to prevent the painful effects of pressure. The roller is repeatedly carried through the notches as it is crossed over the dorsum of the foot, and alternately turned round the limb to near the groin. The apparatus is thus prevented slipping upwards. The ends of the band are passed through the perforations, drawn with moderate tightness, and firmly tied. A few turns of a broad bandage around the pelvis and chest complete the proceeding. The perineal band by which the splint, and with it the limb, is pushed downwards, is attended to from day to day, and tightened as it becomes relaxed, in order to overcome any tendency to shortening." (Liston.)

But the injury the limb has sustained may prevent the use of this apparatus, and then the double-inclined plane, or some other machine, may be necessary. Still, whichever may be employed, intolerable pain will sometimes be occasioned, as well as deep sloughs; therefore it is prudent to see the patient daily, either to tighten or to relax the bandages when the constriction causes severe pain.

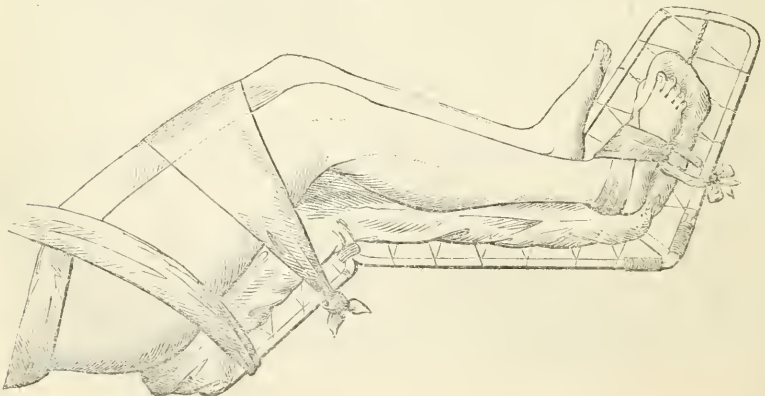
In Germany, the plaster of Paris plan has been much employed, and in many cases I strongly support its usefulness; but I have not had sufficiently numerous opportunities of testing it to speak from experience on the subject. The thigh be-

ing fractured, the patient being placed on a bed, the fracture is reduced, and the limb being surrounded by a flannel roller, all that is necessary is to provide a box of the length of the limb, and about an inch wider and deeper than the thigh. The fracture is reduced, the limb is placed in the box, and fairly extended, or placed in a convenient semi-flexed position; semi-fluid plaster is poured upon it until the thigh part of the box is filled. It is so held for a period not exceeding half an hour; when the plaster will be set, displacement will be impossible, and no partial pressure can occur.

As to the immoveable apparatus employed by Larrey, I object to it as a general plan of treatment, because it puts difficulties in the way of ascertaining, from time to time, whether the fragments are in their proper position, and what is the condition of the limb; but at present, the plan has been so much improved upon by Seutin and others, that I think it should be fairly tested in fractures of the thigh, as it has been in those of the arm and leg in this country. It appears, that, within M. Sauter's knowledge, it has been applied, in the low countries, in no less than 28 cases, with such success "that in eleven of them there was no shortening or deformity." Now although I am not so sanguine as to expect such a result as that, I think there are many cases, especially those of children, in which the plan may be found decidedly useful.

The plan of Sauter and Mayor, already shewn, has been a good deal employed by the inventors, and in cases of great complication may occasionally be found useful, especially where irrigation is advisable. At present, Mayor has substituted iron wire for the board, and it is found that it accommodates itself comfortably to the limb, and facilitates the escape of any lotions which may be used. In young

Fig. 3.

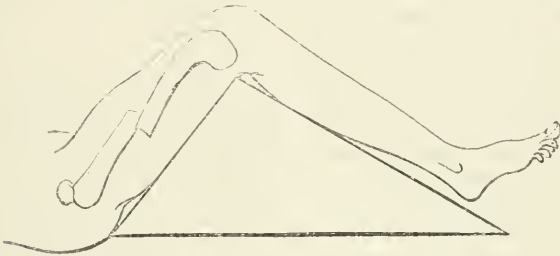


children, fractures of the femur, whatever may be their direction, are much more easily reduced and maintained so than in adults, and the chances of shortening are less. In them, all that is necessary after reduction is to roll the limb from the foot to the groin, to place before, behind, and on either side of the thigh and leg, light splints of wood or milled board, and to fix them there with a bandage.

Such are the principal means invented for the purpose of preventing displacement in fracture of the shaft of the femur: some of them were specially destined for that of the neck, but as they can be indifferently employed in those of the shaft, it was necessary to allude to them here. Looking at them generally, it is evident that, except in young children or very debilitated persons, simple bandaging or position is insufficient. The method of Pott

is too fatiguing, and too likely to produce displacement; but certainly the modifications of it, introduced by Bell, Earle, Amesbury, and others, have much lessened those drawbacks; still, if shortening can be prevented by any means, I do not think this plan capable of effecting it. If extension be associated with it, the shortening will be often very trifling. This is best accomplished by placing the patient on his back, with the limb semiflexed over any apparatus, with a collar just above the knee to which the extending power is applied. This may be accomplished by the machines of Earle, of Santer, or of Amesbury. In the application of semiflexion, be careful that the thigh piece is long enough to prevent riding of the fragments: the effect of this is shewn in fig. 4. If this be neglected, all the evils of exaggerated muscular action

Fig. 4



will be realized in a plan whose principal recommendation is to avoid that circumstance. The plan of complete extension is, unquestionably, one of great value, much employed on the continent, but less favourably regarded in our own country, though, even here, a feeling in its favour is gradually extending. The tendency to shortening and deformity is more certainly avoided by this plan than by any other; its inconveniences, I believe, are, that forced extension is a more painful position than flexion, and that the pressure upon particular points is apt to produce sloughs. The immoveable system, variously modified, or the plaster of Paris plan, is compatible with either position, and may be, in many cases, advantageously associated with either.

INFERIOR EXTREMITY OF FEMUR.

Fracture of the inferior extremity of the femur may be seated just above the condyles—may extend between them, so as to separate one of them from the shaft: sometimes there is, at the same time, a vertical and transverse fracture, so that each condyle is separated from its fellow, and from the rest of the bone.

A fall on the knee, or external violence directly applied to this region, is the ordinary cause of this kind of fracture, which is often complicated by contusion of the knee, or wound of the soft parts.

When transverse, the inferior fragment may be drawn backwards by the action of the gastrocnemii muscles, and an unequal tumor, thus formed, is occasionally felt in the ham; in the vertical fragment, the separated condyle is moveable: sometimes the two condyles are removed from each other, so that the patella is depressed between them.

The vicinity of the knee, and the frequently great obliquity of the fracture, render the prognosis more serious than in fracture of the shaft. In the cases mentioned by Sir A. Cooper, there was considerable shortening and a forward projection of the superior fragment, by which the patella was displaced, and there was much injury to motion at the knee-joint.

The tendency to draw backwards the inferior fragment is the circumstance to which most attention has been directed. To prevent it, the partisans of extension have advised that a pad should be placed in the ham; those who prefer semiflexion,

have found in the relaxation of the gastrocnemii an argument in favour of their plan. But my own opinion is, that the tendency to this kind of displacement is exaggerated: in Sir A. Cooper's three cases there is no mention made of it, though there was considerable shortening.

Treatment.—In the treatment of transverse fracture above the condyles, I would advise that the semiflexed position should be used; not so much because I apprehend the occurrence of this displacement, though, if it occur, unquestionably it would be the most favourable position, but because I prefer it generally: besides, this tendency might be overcome by placing a cushion in the ham. The only objection I know to semiflexion is the chance of ankylosis as a consequence of injury to the joint; but this is unusual, and may be guarded against.

In transverse fracture and separation of the epiphyses, the extended position is supposed to answer best, "because the inferior fragment is forcibly pressed against the superior; a condition which is very advantageous for the formation of callus." But even then, special circumstances may oblige us to employ semiflexion. In that case we should, before the fortieth day, ascertain whether there be rigidity at the joint, as we can then enlarge the angle of the inclined plane to any extent. If a single condyle be detached, Sir A. Cooper advises that the limb should be extended—that a roller should be wound round the knee—that softened mill-board should surround the knee, and be fixed there by a roller. When this apparatus is dry, it is adapted to the shape of the knee, and maintains exact reduction of the fragment. Six weeks after accident we begin to move the joint, to prevent ankylosis. He mentions a case of compound fracture of the external condyle, in which a portion was extracted, and yet the case did perfectly well.

SEPARATION OF THE EPIPHYSES.

The epiphyses of the femur are usually united by bone about the twentieth year, and up to that time their separation is not uncommon. Bertrandi and Roux state that their patients could not stand, and there was circular ecchymosis at the point of separation of the epiphyses. The displacement in these cases is rarely great, and it can scarcely be confounded with any other injury than transverse fracture above the condyles; but as the separation of the epiphyses only happens in young persons, the chances of error are lessened; and even if it occur, no serious inconvenience is occasioned, for the treatment in both injuries is the same. The treatment of these cases is simple: reduction must be accom-

plished as quickly as possible, and this is best done during extension, which is the best position to be preserved, as in fracture of the inferior extremity of the femur.

SUPERIOR EXTREMITY OF THE FEMUR.

Fracture of the upper extremity of the femur may be situated at the base of the great trochanter, the neck, or immediately below the lesser trochanter.

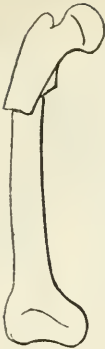
Fracture of the *great trochanter* is usually the result of a violent shock received on this part; it has been produced by violent muscular contraction. The fracture may be transverse, or more or less oblique; in young persons it may be separated in the condition of an epiphysis, and then it is always transverse.

The symptoms are as follow:—If you grasp the trochanter between the finger and thumb, and rotate the femur, you find that the trochanter does not move with it, and during this time we may distinguish a crepitus; there is pain, and difficulty in moving, particularly in abduction. But all these signs may fail if the fibrous expansion of the middle and lesser glutei is not destroyed. Sir A. Cooper mentions a very striking example of such a fracture, observed by Mr. Key, and which was not detected till after death. Like fracture of the patella, the calcis, and the olecranon, the difficulty here is to keep the fragments in contact; in consequence of this, the medium of union is generally fibrous.

Fracture just *below the lesser trochanter* is produced by similar causes to those which fracture the shaft; but the injury is more serious, because of the great displacement of the superior fragment, and the little power we have of keeping it down. The psoas and iliacus muscles draw it forcibly forwards, so as to direct its inferior extremity towards the front of the thigh, whilst all the muscles inserted into the digital cavity of the great trochanter impress upon it a movement outwards. The inferior fragment, on the contrary, is carried upwards and inwards by the contraction of the adductors. The consequence of this is a deformed union, with an angular projection of the fragments towards the outside of the thigh, with shortening (as in fig. 5).

Though we may adapt to this fracture the different bandages we have alluded to, Sir A. Cooper recommends that the limb should be kept in such a position that the thigh may be forcibly flexed upon the pelvis, so as to relax the psoas and iliac muscles, and thus to lessen the tendency to the forward movement of the superior fragment. For this purpose, the knee must be raised on an inclined plane, whilst the patient will be so propped up as to be nearly in a sitting position. This eleva-

Fig. 5.



tion of the trunk should be carried, according to Cooper, to 45 degrees. Of course other means, such as splints and bandages, can be employed; but the tendency to deformity is seldom or never completely overcome.

NECK OF THE FEMUR.

Fracture of the neck of the femur is a subject which has excited as much attention as any in the whole range of medical science, yet the ancients appear to have confounded it with luxation, (*Salzmann de Luxatione ossis femoris rariore, frequentiore colli fractura*.) an accident much more rare than fracture of the neck. The discussions which have been raised on the question of the possibility of osseous union, on that of diagnosis, and the inventions for the purpose of preserving immoveable coaptation, are matters of great interest to every surgeon.

Though the very thick muscular cushion by which it is covered, and the projection of the great trochanter, might be supposed to render the occurrence of fracture as a consequence of direct injury comparatively unfrequent, yet the fact is not so; the most frequent cause of fracture of the neck of the femur is a fall on the great trochanter. In a great many cases, however, fracture is produced by *contre-coup*, by shocks impressed upon the foot, or the knee. Of 30 cases taken from the *Clinique de Desault*, 24 were consequences of falls on the trochanter. Sir A. Cooper mentions a case in which the fracture was produced by a sudden twisting of the trunk, the limb being fixed.

It ordinarily occurs in elderly persons, and the anatomical changes which are brought about in the neck of the femur to a certain extent explain the frequency of this fracture in persons advanced in life. Sir A. Cooper believes also that the more horizontal direction of the neck in woman, and the comparative feebleness of their

constitution, expose them more than men to this fracture. Sanson states that so large a proportion of these injuries as two-thirds occur in women.

Fracture of the neck may occur at its middle, where it is thinnest, at its superior extremity, near the head of the bone, or near its junction with the trochanter major, but the most important distinction relates to the capsule. It may be entirely within, or entirely without the capsule, or it may be partly within and partly without. An intra-capsular fracture is usually more or less completely perpendicular, and occurs where the neck is thinnest and most spongy; in a large number of cases the fracture is oblique, extending to a certain distance within and without the capsule. Sir B. Brodie saw a case in which the obliquity was so great, that the superior prevented the ascension of the inferior fragment, and there was no displacement or shortening. Extra-capsular fracture is seated near the base of the neck.

Symptoms.—The symptoms of fracture of the neck are sufficiently numerous and sufficiently marked to render the diagnosis easy. At the moment of the injury a severe pain is felt at the hip, and sometimes crackling is manifest; the patient cannot ordinarily move the thigh, and if he be down, he cannot usually get up: still many cases have occurred in which the patient has not only been able to get up but to walk home. Boyer mentions the case of a man who with the assistance of a stick walked about, some days, before displacement became evident. Many similar cases are on record: this can only be explained by assuming, with Eckl, that the fragments dovetailed one with the other.

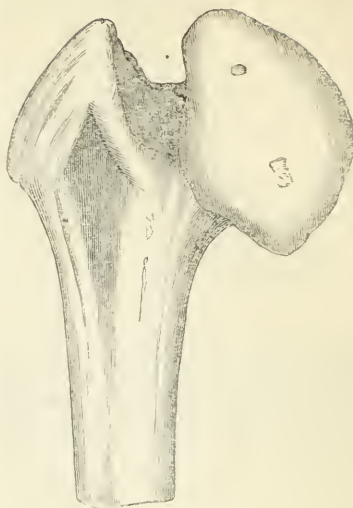
The injured limb is almost constantly shorter than that of the sound side, but the shortening is less when the fracture is within the capsule than when it is outside of it; this is owing to the capsular ligament preventing great displacement. Sir A. Cooper does not, however, think this by any means general, and that probably it is more a theoretical than a practical point. If there be strong reason for suspecting fracture, and shortening cannot be made out, Sir A. Cooper recommends that the patient should stand up, to ascertain if the heel touches the ground; if it do not, and we try to make it touch, a pain is manifested at the hip, which seems to be owing to the dragging of the *psaos iliacus* and *obturator* muscles; the shortening is owing to the contraction of the muscles by which the inferior fragment is drawn upwards. If we ask the patient to raise the whole limb while lying on a bed, he cannot do it. If we use slight traction upon the limb, the shortening disappears, but as soon as we cease to make extension, it re-

appears. The knee is slightly flexed and rotated outwards. The trochanter major is less prominent, and nearer to the crest of the ilium than that of the other side. The corresponding buttock is more prominent than the other. The movements which we impress upon the limb give acute pain at the hip and the groin. Flexion of the thigh is painful; less if we incline it inwards than outwards. During the time we are moving the limb crepitation can often be heard, but this is not constant. Sanson proposed a plan which he had rarely known to fail; with one hand he takes hold of the leg just below the knee, flexes it upon the thigh, raises the thigh until it is at a right angle with the pelvis: the muscles being thus relaxed, he impresses upon the limb a movement of rotation, then alternately moves it backwards and forwards, whilst with the other hand he grasps the great trochanter, and assists in this backward and forward movement. If during these movements no crepitation is produced, if the shocks impressed upon the great trochanter are communicated to the pelvis, there is strong reason to believe that there is no fracture.

With respect to the shortening of the limb as a symptom of fracture of the neck of the thigh bone, though it is of great value, it is one which must be regarded with great suspicion, when found alone, because it is not an unfrequent occurrence in the absence of fracture. Old age seems to bring with it, as a tolerably constant circumstance, a change in the length and direction of the neck of the femur, but as a consequence of falls upon the trochanter it may occur at earlier periods of life. In these cases the distance between the summit of the trochanter and the crest of the ilium is always lessened. Five very interesting cases of this affection are described by Mr. Gulliver, in the 128th number of the *Edin. Med. and Surg. Journal*. The appearance presented by the femur is here shewn (fig. 6).

The point of the foot is almost always rotated outwards, so that the heel rests near the level of the internal malleolus of the other side; this rotation outwards is not always produced at the time of the accident, sometimes not for some days afterwards. Some persons attribute this to the action of the rotator muscles, others have attributed it to the tendency of the foot to incline outwards. Sir A. Cooper believes it to be the weight of the limb. Paré, Petit, and Desault, speak of cases where the toe was twisted. Desault says he frequently met with it. Morgagni, Martin, Dupuytren, Guthrie, Goyraud, Sanson, Syme, and Gulliver, refer to cases they had seen; other cases are on record, and attempts have not been wanting to shew that

Fig. 6.



this position is one of the principal symptoms of fractures of the neck, when this part has been driven into the great trochanter. Guthrie says, that whenever the fracture is external to the insertions of the pyriformis, gemelli, obturatores and quadratus muscles, yet sufficiently within the insertion of the glutæus medius and minimus, the toes will be turned inwards; and certainly Gulliver's case confirms this observation. Dupuytren thought the obliquity of the fracture had much to do with the position; if the line of fracture were backwards and outwards, he thought the point of the foot would be everted; if the direction were the opposite, there would be inversion. However, though inversion may happen, it is extremely rare; and I am astonished to find Desault state that the proportion in which the rotation is outwards, is only four to one. Boyer never saw the toe turned inwards. Cloquet has seen above 60 cases, but not a single case of inversion; once in an old woman he saw the foot directed straight; and so strongly was Delpech convinced that union was never obtained without shortening and eversion, that for many years he offered 2000 francs for any properly authenticated specimen of union without deformity.

If we compare the symptoms we have enumerated as marking fracture, with those of the different kinds of luxation of the femur, we should say that it was easy to distinguish diseases, that the ancients had confounded.

It is especially luxation upwards and outwards that has occasioned this mistake;

yet fracture of the neck of the femur has nothing else in common with it than shortening of the limb. The impossibility of restoring the limb to its proper length by moderate traction; the preservation of its length when once the head of the bone is replaced in the cavity from which it escaped; the impossibility of turning the foot outwards, should be sufficient to enable us to distinguish between these two injuries. In the luxation upwards and inwards, the head of the femur being directed upon the pelvis, the limb is shorter than the sound one, and the foot is everted; but it is impossible to bring the foot to its proper direction, or to give the limb the length it has lost, without reduction. It is still more difficult to mistake the signs of the other luxations. I am not, however, disposed to deny that there are cases where the displacement being null, it becomes very difficult to decide upon the existence of fracture. A man advanced in age fell upon the trochanter; the limb was shortened about half an inch; no other peculiarity was manifest. An eminent surgeon decided that there was fracture of the neck of the femur; a second surgeon confirmed the opinion; a third said the shortening might depend upon muscular retraction; but, as nothing indicated this retraction, the fracture apparatus was applied. The patient died of ascites on the fiftieth day. Upon examination, fracture of the neck was discovered.

In a few words, I will repeat the diagnostic signs which announce fracture of the neck of the femur; a fall on the trochanter, the knee or the foot, pain in the hip, inability to flex the thigh upon the pelvis, the leg being extended upon the thigh, the shortening of the limb, the possibility of restoring it to its proper length, which is again lost when we cease to extend it, the inclination of the knee and foot outwards, crepitation after making extension and rotation, and the small extent of the arcs of the circles which the great trochanter describes. If the absence of any essential symptoms should raise a doubt, the application of the fracture apparatus is no less necessary; it may be useless, but can rarely be dangerous, for a few days will generally remove all obscurity.

It is of the highest importance with respect to the prognosis, and even to the treatment, to determine whether the fracture is intra or extra-capsular. According to Sir A. Cooper, the greater number of the symptoms we have enumerated belong to the former; those of the latter are the following:—1st, the accident happens in young subjects; 2nd, it results from considerable external violence; 3rd, crepitation is more easily perceived; 4th, the trochanter major is directed forwards, and

is nearer the crest of the ilium, than in the natural state; 5th, the pain is greater; 6th, the limb is less shortened; 7th, rotation is more easily executed; but you will meet with cases where even with this assistance you will fail in determining whether the fracture be intra or extra-capsular.

However simple fracture of the neck of the femur may be, it is usually complicated with contusion of the soft parts around the joint.

The possibility of osseous union in cases of fracture of the neck of the femur, is a point in pathology which has been the subject of much controversy. It has been said that osseous union within the capsule could not take place; either because the osseous juice, contributing to form the callus, was dissolved in the synovia, because the upper fragment did not possess the necessary vitality, or because of the absence of the periosteum; but neither of these points are tenable. Besides, it is certain that fractures of the neck of the femur may be united by bone; the cases of Amesbury, Van Houte, Stanley, Brulatour, and many others, as well as the specimens existing in museums, are evidence of this—that this union may happen without riding of the bones or very sensible shortening of the limb; still in most cases the union is fibrous, and sometimes there is no union. When the fracture happens near the head, and the fibrous membrane is completely destroyed, it is said that the nutrition of the superior fragment languishes, that it is only supplied by means of the small vessels passing through the ligamentum teres, and that this is sufficient to enable it to contribute its proportion towards osseous union. Much of the difference of opinion which exists on this subject is owing to two circumstances: many persons have only observed the accident in old people: now in old people the vascularity of bone is reduced to its minimum, and therefore unfavourably disposed for union; and in the great majority of cases, the means of preserving immobility are insufficient: persons consequently believe that osseous union is impossible: those who have had opportunities of seeing the accident at different ages, (and certainly those opportunities are unfrequent; of 225 cases of intra-capsular fracture, Sir A. Cooper states that only two were under 50,) and who have employed machines capable of maintaining absolute rest, are satisfied that bony union may be obtained. Langstaff has a specimen taken from a man of 32. Stanley had a case of 18; he died three months after the accident, and the fragments were found to be united by bone. Many eminent men, and among them Sir A. Cooper, state that they have never known a fracture, fairly within the

capsule, united by osseous matter ; his French translators on the contrary think osseous union takes place in one case out of 50. The various specimens of osseous union seen in museums do not appear to them to be conclusive, because, as they allege, some portion of the fracture extended without the capsule.

It would appear, at first sight, surprising that a fact so easily determined should have so long remained undecided ; but, to some extent, this is accounted for, when we know that some who have taken part in this discussion have reasoned on incorrect data. A large number of anatomists have stated that the fibrous capsule is inserted into the femur in the course of the line descending from the greater to the lesser trochanter. They have, it is true, mentioned a reflexion of the capsule setting out from the base of the neck to pass towards the head, but no one has mentioned the exact limit of the femoral circumference of this capsule. Now what is this limit? In the anterior and superior part the capsule is attached to the parts already mentioned, but inferiorly and posteriorly, the capsule is inserted along the neck to the union of the external with the middle third. It must, therefore, follow that all fractures seated in the inner half of the neck of the femur must be intra-capsular; then, it is said, the internal fragment is so badly supplied with vessels, that consolidation is hardly possible. It is further believed that, when a fracture is some distance from the base of the neck, but in its outer half, it may be perfectly united, because the fragment attached to the head is connected with the capsule, and receives from it enough of vessels to enable it to take its fair part in the work of osseous consolidation. Thus it is believed that contradictory opinions may be conciliated. Certainly, if these data be accepted as correct, the cases which I have seen of undoubted bony union go so far in confirmation of Sir A. Cooper's opinion, that they were all on the outer half of the neck, and, consequently, extra-capsular. The causes ordinarily assigned for non-union by bone in these cases are, want of necessary nutrition in the superior fragment, difficulty of maintaining contact, which I hold to be out of all comparison the most decided cause of failure, and, according to Sir A. Cooper, the absence of pressure of one fragment against another.

I have no doubt but that age is the main cause of this discrepancy. Ruysch mentions many cases transmitted to him by Gerard Borst, who was attached to an asylum for old women at Amsterdam. In all those cases he believed great age constituted an invincible obstacle to the formation of callus, the head of the bone

becoming shrivelled and ligamentous ; but this is not the cause, because in very advanced age union is obtained in other situations. It is impossible to determine at what period, in such cases, we should cease to expect a cure. Lesne used to exhibit the femur of a woman of 89 which had been united by bone. Many similar facts seem to me to lead to the conclusion that proper attempts to cure should be made. I have thought it quite necessary to say thus much on the subject, because if intra-capsular fracture could not unite by bone, and if ligamentous union is, as some persons say, as advantageous, if not more so, why subject the patient to a permanent, painful, dangerous, and always inefficacious extension? why keep the patient in bed many weeks.

CLINICAL LECTURES,

Delivered at St. Vincent's Hospital,

By J. M. FERRALL, ESQ., M.R.I.A.

First Medical Adviser to the Hospital.

Gastritis, subacute, a frequent complication of other diseases—Cases of subacute gastritis treated by depletion and diet—Kreosote in obstinate vomiting—Two forms of organic disease of the pylorus, generally distinguishable during life—Stricture of the pylorus without cancer—Cancer of the pylorus without stricture—Diagnosis.

GENTLEMEN,—In the selection of cases for your instruction, I have thought it expedient to bring under your notice what is useful, rather than what is rare, in practice; convinced, as I am, that many pupils quit their studies with their note-books filled with medical rarities, while they are ill prepared by observation for the ordinary duties of their profession. I shall, therefore, occasionally mingle such inquiries with the more serious objects of our researches.

There is an affection of such common occurrence that you can have no pretensions to the rank of a well-informed practitioner without being perfectly familiar with its symptoms and treatment. You may term it subacute gastritis, gastric irritation, or acute dyspepsia, in accordance with different authors; but it is little matter by which denomination you express it, provided you are prepared to recognize its approach, and are competent to its management. It may arise in the course of some surgical disease, or subsequent to an injury. It may complicate a fever, of whatever origin, or (it is in vain to deny it) it may spring up in consequence of the treatment employed to subdue a pneumo-

nia, or some other acute disease. Under any of those circumstances, to overlook gastric disturbance of an urgent character would be to compromise the safety of your patient. You cannot, therefore, bestow too much pains on the study of this important subject.

Three cases of gastric irritation, or subacute gastritis, have been discharged this week, and two post-mortem inspections have been made in cases which were admitted in a hopeless state of organic disease of the stomach. The two latter are instructive specimens of the two varieties of organic lesions of this organ, to which I have before called your attention. You witnessed the difference in their symptoms; you have now the parts before you, and can see whether my explanation of the cause of this difference is founded in reality. I have long been convinced that many cases were termed cancer of the stomach which really had not the essential characters of that malignant disease; and I believe that, in many instances, the phenomena displayed during life were sufficiently distinctive of those affections. The two cases to which I allude have been now under your observation for some time, and you are consequently prepared to follow me in their analysis.

We shall first briefly dispose of the cases of gastric irritation.

Vomiting—Epigastric tenderness—Loss of flesh—Cure by depletion and low diet.

Eliza Higginson, æt. 20, was admitted December 5th, complaining of severe pain at the pit of the stomach, loss of appetite, chilliness, and occasional burning heat. She frequently vomits her food, which returns with a remarkably sour flavour. She is thirsty. Her flesh and strength are greatly reduced; skin hot; pulse 90; tongue slightly coated in the centre, with florid tip and edges. The bowels are confined; urine scanty, and high coloured, and acid. Epigastrium tender and tumid. She is impressed with the notion that her complaint is all weakness, and has taken ale and porter every day, although she now admits she suffered more in consequence. The catamenia is regular. She has never been well since she met with an accident by coming in contact with the shaft of a car, about two months ago, but had no other ill consequence.

Cupping on the epigastrium to eight ounces. Arrow-root in small quantities. The bowels to be freed by enemata, and the following powder to be taken three times daily:—

R Sodæ Bicarbon. ʒj.; Sacch. Alb. gr. v. M. pulv.

December 10th. — She has not had

vomiting since her admission. Urine paler, and more copious, but still acid; bowels free; tongue improved in colour.

Pergat.

20th.—Feeling herself quite well, she requested a little meat a few days ago, but suffered pain that night; on which account a small blister was applied to the epigastrium. There has been no pain since. The vomiting never occurred since she came into the hospital. Her strength is improving, although her diet is exclusively farinaceous. The skin is dry, but no feverish heat is felt now. Pulse 72. A warm bath is ordered.

24th.—Feels quite well. Discharged.

Constant vomiting—Epigastric tenderness—Depletion—Kreosote.

Mary Bardin, ætat. 25, was admitted on account of constant and painful retching, great soreness and pain at the pit of the stomach, and excessive exhaustion. She had been an out-patient for bronchitis. The liquor antimon. tartar, in half-dram doses, had succeeded in removing the pectoral affection, but the stomach became disordered. She discontinued her attendance at this time, believing that the stomach would improve when she took more liberal diet. This only aggravated the evil; and, after ten days of suffering from vomiting, which gradually increased until even cold water was rejected, she begged to be admitted into the hospital.

The epigastrium was tender; the tongue coated; and, at the tip, studded with red points. Pulse feeble and small. Skin hot and dry. Countenance haggard, and expressive of pain. Bowels easily moved, and without pain. Urine scanty.

A sinapism was laid on the epigastrium, and she was directed to take a scruple of aqua lauro-ceras three times a-day.

The next day the report states that the vomiting is less frequent, but continues still; there is more reaction, and the pulse is more voluminous. She was then cupped on the epigastrium to six ounces, which removed the pain and tenderness altogether. Cold water in sips remained on her stomach, but every thing else was rejected. A drop of kreosote, with mucilage and water, was administered every fourth hour with the best effects; the retching ceased, and arrow-root and boiled bread-and-milk were retained. From this time she improved rapidly. The renal secretion increased under simple treatment, as effervescing mixture, and she was dismissed free from complaint on the eleventh day from her admission.

Chronic gastritis—Epigastric tenderness—Depletion—Cure.

Anne Dunne, ætat. 38, had repeatedly suffered from pain in her stomach, with

vomiting of sour fluid. On more than one occasion she has attended as an out-patient, and received complete relief from antacids, mild aperients, and counter-irritation of different kinds. Within the last three months she has been losing flesh, and has suffered so much after meat or stimulating diet, that she has given them up altogether. Her countenance is not sallow, though her face is thin. Her tongue is rather clean, but too red at the edge. Pulse 80. Bowels confined. Urine in natural quantity, but depositing deep-coloured lithates. She suffers greatly from flatulence; and has been induced to take stimulants, as pepper-mint, on account of the immediate relief which follows their use. She has constant thirst, and desire for cold drinks. Catamenia regular. No pectoral disease.

This patient had learned by experience to manage her own diet; and the only error she committed was in the use of stimulants, and in postponing her application for proper aid. She was ordered to remain in bed, was cupped on the epigastrium, and had equal parts of aqua calcis and warm new milk three times a-day. The bowels freed by enemata.

Four days afterwards the report states that the flatulence is very much diminished, and she bears pressure better on the epigastrium. No tumor or circumscribed hardness was to be discovered in that region. The bowels were acted on by emollient enemata, which she found to diffuse a sensation of comfort through the abdomen and stomach.

As the case had now become chronic, and as frequent attacks had succeeded each other for a period of two years, it was deemed advisable to establish a permanent counter-irritation over the epigastric region. For this purpose two moxæ were applied. The pain of this application being of very short duration, is better borne than that from caustics of other kinds.

In a fortnight this poor woman was so far recovered as to desire to return home. The issue was established over the former seat of pain. Soda was occasionally given in lieu of the aqua calcis, but was always discontinued when the urine showed a neutral or alkaline reaction. Her tongue became pale and moist. She lost the thirst, and was now able to take a little chicken with impunity.

In the latter case, considering the period of life, the frequent recurrence of attacks, and the loss of flesh, there is reason to apprehend that if she relaxes in her attention to diet, or neglects the earliest intimations of irritation, organic disease of the stomach will ensue. We frequently see persons go on for years, occasionally suffering from gastric irritation, and at other

times quite free from complaint; until, at length, the attacks settle into disease of an incurable nature. An instance of this kind will occupy us presently, in the case of poor O'Shanghnessy, who died a day or two ago.

The first case, Higginson, showed the advantage of decided treatment, and of depletion whenever the epigastrium is tender permanently. By this I mean, when the tenderness is not the sequela of an attack of gastrodynia, or spasm, or the soreness which remains after violent vomiting, and which latter often resides in the abdominal muscles. You should not omit depletion by cupping or leeches whenever there is evidence of hyperæmia of the organ, suggested by the florid tongue, thirst, hot skin, local heat over the stomach, and deep-seated tenderness on pressure. This being premised, your other remedies will produce a better effect. The state of the renal secretion will often assist your diagnosis, although you must not forget that copious fluid vomiting will render this secretion scanty.

The second case, Bardin, evinces the efficacy of kresote in obstinate vomiting. The advantages of this remedy were first insisted on by Dr. Elliotson, and have since been acknowledged by Dr. Burne, of the Westminster Hospital, who has employed it in irritation both of the stomach and bowels with success.

Of the two forms of organic disease of the pylorus to which I alluded, and which are preceded or accompanied by symptoms of chronic gastritis, one consists in hypertrophy of the tissues entering into this portion of the organ, and appears to destroy the sufferers by increasing constriction of the orifice, impeding the passage of the aliment, and literally starving them to death. The other presents the characters of an essentially malignant change—involves other organs generally—and frequently ends in the dissolution of the patient, without any mechanical obstruction in the part.

Stricture of the pylorus without cancer—Death from inanition.

Mary Cousins, æt. 39, stated on admission that she had been labouring for six months under her present complaints. They commenced by a sudden attack of vomiting without any evident cause. She had pain in the stomach, but does not describe it as having been severe. This acute attack gradually subsided without treatment, but left a disinclination for food, and pain after eating. The vomiting, which during the acute invasion brought up every thing, solid and fluid, immediately it was swallowed, was then much less frequent, and only followed the ingestion of animal or stimula-

ting food, and she began to think herself well. But latterly, milder food returns, and she suffers pain after every meal. She is remarkably emaciated, and describes the change in this respect as being very great within the last month; her features are drawn and lengthened; the nose is blue, as if from cold; the lips pale; tongue slightly coated, with red edges; pulse small, 100; skin dry; bowels obstinately constipated: she says three weeks elapse between the evacuations. On examination, a hard tumor, about the size of a small apple, is found to the right of the umbilicus; there is tympanitic distension, especially of the left side of the abdomen; very little pain on pressure.

This was the report of her state on admission. Several days elapsed before the bowels yielded to enemata, and then a very large faeculent discharge took place; a dose of aqua lauro-ceras, before her slight meal of arrow-root, seemed to cause it to be retained, but we found on inquiry that the vomiting was only postponed. She did not vomit after every meal as heretofore, but it gave her pain; and now an attack of vomiting was observed to occur regularly at 5 o'clock every morning. On inspection, the quantity ejected was found to exceed greatly what had been ingested; it consisted of a brown fluid, like chocolate, mixed with mucus and some traces of the food; the bowels remained confined, and acted not more than once a week; the urine brown and scanty; the tongue generally dry. The saliva sometimes yielded an acid reaction, but nothing satisfactory could be said on this point, from the variable nature of the results. She suffered from thirst, but dreaded swallowing on account of a peculiar distress which followed it: together with the pain, a remarkable sensation of regurgitation immediately commenced (and could be felt by the hand laid on the abdomen,) at the seat of the hard tumor; from this point it ascended towards the cardiac orifice, and thence returned again. Nothing could exceed the dread she felt of exciting this painful state.

I need not remind you of the various remedies employed to soothe her sufferings. Preparations of hydrocyanic acid, bismuth, kreosote with opium, belladonna externally and internally, &c. &c.; all of these produced relief for a time, but I think she derived more frequent comfort from kino and acetate of morphia. This copious secretion of mucus, as well as the flatulent distension of the stomach, appeared to be in some measure diminished by this plan. The chocolate-coloured vomiting, however, persisted, and was only occasionally controlled by the exhibition of the tincture of the muriate of iron.

With a view to sustain this poor woman,

enemata containing strong broths, milk, and arrow-root, were tried, and seemed for a while to revive her; at length she began to sink more decidedly, her voice became husky and reduced to a whisper; her pulse scarcely palpable; her tongue icy cold; the surface generally, cold and bluish, and reminding us of the collapse of cholera; the evacuations by the bowels more rare; occasional hiccup. She lay for several days in a torpid state, sleeping with the lids half closed, and scarcely living. The vomiting occurred regularly until she was released from her sufferings.

Autopsy.—Remarkable congestion in the veins of all the intestines as well as of the stomach. The vessels large, and marked by a brownish dark blood. The stomach was enormously distended, and taking an unusual course. The whole left half of the abdomen was occupied by this organ, which descended directly into the left iliac fossa; thence it ascended towards the umbilicus, to the right of which was situated the hard tumor of the pylorus, which had been felt during life. The stomach contained a large quantity of brown fluid similar to what has been ejected; the mucous coat was tinged of the same colour; the veins large and congested. The thickness of the stomach in its pyloric third was such as to make it resemble leather to the touch. A section of this portion, you perceive, reminds us of a thickened urinary bladder with deceased prostate gland; the passage into the duodenum would hardly allow the passage of a probe: the contracted portion was near three-quarters of an inch long, and ascended by a curve to the duodenum.

On examining the section carefully, you perceive the tunics are all thickened, but there is no breach of surface. The mucous coat presents no trace even of abrasion. The brown chocolate fluid was then an exhalation from the surface of the membrane. You cannot dissect off the mucous membrane without the sub-mucous cellular coat. They come off together, and appear to be connected with the muscular coat by a fine cellular tissue. This is not exactly what Andral describes; for he mentions the thickened cellular tunic dipping by bands between the muscular fibres, and connecting itself with the sub-serous cellular tissue. The muscular coat, when washed, presents very much the colour and appearance of the muscle of a fish; the fibres are distinct, but hypertrophied. The thickness of the section is rather more than half an inch at the pylorus, and rather less than half an inch below that point.

The liver was dark coloured, but contained no morbid deposit. The gall bladder was very large, and filled with deep-yellow coloured bile; the spleen of

moderate size; the kidneys rather small, and of a venous colour on section, but presented no other change; pancreas healthy.

We shall now pass to the case of O'Shaughnessy, and conclude by contrasting it with the former.

Cancer of the pylorus without stricture.

Ellen O'Shaughnessy, æt. 40, was a patient in St. Vincent's Hospital on a former occasion, (twelve months ago). She suffered, at that time, from pain after food, tenderness below the ensiform cartilage, distressing burning sensation, and acidity. This state succeeded to a rather sudden attack of pain and vomiting, which she attributed to interruption of the menses. She never ventured to use animal food afterwards without suffering immediate pain and burning heat, and, within half an hour, rejecting the entire. She applied to a medical gentleman for advice in the beginning, but states that no depletion was employed. On her admission for the first time into the hospital, she had leeches applied, and blisters, and took small doses of opium, with antacids, with good effect. Her appearance improved, though not very much, and she returned home, feeling quite well, but exhibiting a sallowness of complexion which did not belong to health; farinaceous diet was advised.

She then went to attend a lady, who pressed her to use a more nourishing diet. In deference to this advice she tried wild fowl in small quantity, but soon wished to give it up, on account of returning pain. Her patroness insisted on her persevering, and assured her of success, alleging that she only wanted proper nourishment to restore her completely. The pain, however, increased; she became feverish again, lost colour and flesh rapidly, and, although the vomiting seldom occurred now, her suffering was so great, after even the mildest food, that she lost rest altogether.

In this state, after an absence of twelve months, she begged to be re-admitted into hospital. She was now so altered in appearance, that she was not recognized at first. Her voice was feeble; her colour sallow. She was emaciated, and her countenance wore the aspect of malignant disease.

The abdomen, on examination, afforded abundant evidence of organic disease; a large tumor occupied the epigastric region, and could be traced upwards under cover of the ensiform cartilage and ribs. The whole of this region was dull on percussion, as well as the right hypochondrium; a distinct bulging prominence marked the centre of this solid mass. The abdomen was rather shrunken, and had little of a

tympantic sound. The pain she complained of extended, she said, through the bowels towards the pubic region. She had occasional diarrhœa and griping, but not constipation at any time. It was evident that extensive organic disease existed in the abdomen; the bulging prominence was considered to be a tubercle of the liver: the situation of the pylorus could not be ascertained.

The principal indications, namely, to moderate the diarrhœa, and lessen the sensibility of the mucous surfaces, were attempted by cretaceous preparations, with opiates, aqua calcis, rice, flour and milk, &c., with varying success. Every remedy seemed of use at first, but soon ceased to exert any control over the symptoms. The same remedy was often resorted to again with advantage, although it had, before, ceased to procure relief. The diarrhœa was remarked to produce very fetid discharges. The renal secretion was generally scanty, and remarkably loaded with purpurations; her colour now became more jaundiced; she had occasional perspirations at night, and lost strength rapidly; she had hiccup. The pain was absent occasionally for several days together, and certainly became much less distressing. For two or three weeks before her death she had no vomiting; but the diarrhœa became less manageable even by opiate enemata. The dejections became paler, but still very fetid. The tongue dry and brown; the pulse faltering; the hiccup more frequent. She sank in a semi-comatose state. The saliva was occasionally acid during this period.

Autopsy.—*Head.*—The vessels of the brain (the veins and sinuses) were rather turgid; no remarkable arterial vascularity. The consistence of the brain was rather firm; no sub-arachnoid or other effusion.

Chest.—The pleuræ costalis and pulmonalis were adherent at several points of right chest; a few tubercles were found in a crude state in the apex of that lung. No disease in the left side. The heart was rather small; muscular substance softer than natural; cavities and orifices normal.

Abdomen.—The peritoneum was adherent in a few places, and connected the liver to the diaphragm. The liver was large, and presented a striking example of the soft tubercle. You observe the masses are circumscribed accurately, have a yellow colour, are depressed in the centre, and are marked by numerous radii formed of blood-vessels proceeding from the liver towards the centre of the morbid growth. Their circumscription, in the substance of the liver, is complete; for you perceive they can be turned out entire, and without destroying any thing but a very fine cellular

tissue which surrounds them as they lie imbedded in the organ; a section exhibits a yellow soft encephaloid substance, almost creamy in some parts, enclosed by septa of a firmer consistence and a whiter hue. There is no very apparent arrangement of the septa. Some of the tubera are excavated in the centre, or softened into a puriform fluid. The stomach was rather contracted; it lay concealed by the liver, and by a mass of morbid growth which surrounded the pylorus, and extended behind it towards the spine. Several globular tubera, as large as filberts, were found in this mass: their structure was similar to those in the liver. The gall-bladder was small, and contained a little dark green bile. On opening the stomach, a large sloughy excavation occupied the place of the pylorus; the surface was irregular; in some places reduced to a pulp; and in others, where sloughing had not occurred, gristly to the feel. This large ulcerous cavity was smeared with a peculiarly fœtid sanies. The passage of the pylorus was open and large, and admitted two fingers to pass readily into the duodenum. A section of this mass shewed a surface of cartilaginous appearance, striated, but exhibiting no trace of the tunics of the organ. The stomach exhibited little thickening beyond the seat of this cancerous disease. The mucous coat of the intestines was tumid and vascular, towards the termination of the ileum; no abrasion was discovered. The spleen and kidneys presented nothing remarkable.

You will now, gentlemen, understand why I desired your special attention to the phenomena which, so very different from each other, characterized those cases during life. You will also be convinced of the value of minute anatomical analysis, post-mortem, by the clear and satisfactory explanation which, in these two cases, it affords of the symptoms you observed.

In the case of Cousins, the pylorus, though less extensively diseased, could be felt during life, because, in the first place, no other tumors existed to conceal it; and secondly, because the enormous distension of the stomach, occasioned by the permanent obstruction at its orifice, brought it lower down into the abdomen. But how are you to recognise a pyloric tumor, so far displaced inferiorly, as to be on a plane with the umbilicus, and laterally, as to be placed in the right side of the middle line? Might it not be a tumor of the omentum, or other growth connected with the intestines? If you adopt this rule, you will seldom be deceived. Percuss the proper region of the stomach, and discover its peculiar tympanitic clear sound. Then follow this sound, by progressive percussion downwards, till you lose it, and finally

pass to the right, till your fingers are conducted by this sound to the spot occupied by the pyloric tumor.

It is to Andral we are indebted for precise notions of hypertrophy of the tunics of hollow organs, as distinguished from other changes of a more malignant nature. He remarks the enormous distension of the stomach, which occurs in pyloric obstruction from this cause, and records examples where the contents were rejected only every seven or eight days. He also notices the fact, that chocolate or coffee-coloured fluids may be vomited in cases which present no abrasion of the mucous surface. The case of Cousins is well calculated to support his opinion, and shows that this kind of vomiting is not, as it was considered in Dr. Baillie's time, pathognomonic of cancer of the stomach. Dr. Baillie does not appear to have recognised this disease. He describes stricture of the pylorus as caused by a "permanent contraction of its muscular fibres," and accounts for its occurrence at the pylorus, more frequently than at the cardia, by the "fibres at the pyloric end being more circular in their direction," and possessing "a stronger contractile power." He adds, "I have seen one instance of this contraction at the pylorus, which, even there, is a very rare disease." It is difficult to say whether this is meant to apply to a case of hypertrophy, or whether he may not have been deceived by the contracted state of the pylorus, which often exists at the moment of death; but which did not exist, perhaps, an hour before that period, and which is easily removed after death, by the slightest dilatation, without injury to the parts. I believe this to be possible, because I have more than once seen a contracted state of this orifice exhibited as a disease, when the largest finger could be readily passed through it, and when the tunics, thus separated, were perfectly natural in thickness, pliability, and consistence. In the section entitled, "diseases of the pylorus," that distinguished pathologist, Dr. Abercrombie, describes some of the prominent symptoms; but does not contemplate any distinction between the cases in which hypertrophy without cancer is to be found, and those in which the essential characters are malignant. Indeed he does not appear to have examined the parts with that minuteness which alone could have enabled him to make the distinction. He gives three cases, and in the first states merely that "the pylorus was surrounded by a mass of schirrus, the size of an orange, very firm, or nearly cartilaginous;" "the stomach in other respects was entirely healthy." In the next case, he says, "a mass of schirrus, four or five inches in diameter, surrounded the pylorus,

and the pyloric orifice was so narrowed as scarcely to admit the point of a very small finger. The inner part of the mass opened upon the internal surface of the stomach by an ulcerated space, covered with large cancerous-looking tubercles. The other parts of the stomach were tolerably sound." In the third case also, he describes the external tumor and the internal surface, or that presenting into the cavity of the stomach; but the structure of the mass is not displayed by a section, by which, and a short maceration, the true nature of the tumor can alone be determined.

Returning then to the two cases before you, you will observe that they differ from each other in anatomical characters, in localization, in their progressive changes, in the cause of death, and in certain symptoms manifested during life.

In the first case (Cousins) there is hypertrophy of the tissues, but they are distinguishable: it is as if they were placed under a lens and enlarged. In the second case, the tissues are disorganised, and confounded together.

In the first case, the disease is local, and seems to arise from gastritis of long duration. In the second case, the taint is general, and other organs are involved in the malignant change.

In the first case, the disease ran its course to a fatal issue, without any breach of the mucous surface. In the second case, ulceration was probably an early change, for the opening was considerably enlarged.

In the first case, the patient died from irritation, the pyloric orifice being almost completely closed. In the second, the passage was larger than natural, and the patient sank under the disease of several organs, and the general taint.

In the first case, the patient had a peculiar, cold, pinched, and starved look; the vomiting continued up to the time of death, and the whole ingesta were returned; and there was constipation, or, I should prefer calling it, rarity of faecal discharges, for constipation means a different state. In the second case, the aspect of the patient was that of malignant disease; the vomiting became less frequent, and ceased before death; and there was an opposite condition of the bowels, or diarrhoea*.

I may remark that, in cases like the

first, the vomiting of each meal separately may be generally prevented by suitable remedies; but you must not be deceived by this event; for the food will no less certainly return, as soon as the stomach becomes so much distended as to bear no further accumulation; and this I have remarked to occur more especially in the horizontal posture.

The state of the gall-bladder is worth a word or two of notice. It was found in the first case greatly enlarged and distended with bile. Now, this appears to be connected with absence of chyme in the duodenum, and the want of the accustomed stimulants to the biliary ducts. Morgagni relates the experiment performed by Val-salva on a dog which he, cruelly enough, starved to death. The gall-bladder was unusually large, and distended with bile. The starvation in poor Cousins's case was the result of organic obstruction. The celebrated surgeon, Mr. Carmichael, suggests as an explanation of the occurrence of gall-stone in the human subject, the pernicious habit of long fasting and late dinners, which so generally prevails. I have no doubt that, in many instances, gall-stones have their origin in this way; but some other cause must occasionally coincide to produce the result. In Cousins's case, for instance, there was long and painful fasting, and the gall-bladder was found distended with bile, but there was no gall stone in that case.

REPORTS OF CASES.

By H. M. HUGHES, M.D.

Physician to the Surrey Dispensary.

Scarlatina.—In the eight cases of this complaint, of which I have preserved some records, nothing, with the exception of the circumstances attending the fatal case, is worthy of notice. The disease, in these and all other cases I have seen during the year, was mild, and the affection of the throat trifling. Suppuration occurred in none, and very slight anasarca without coagulable urine in only two or three. The treatment was of course very simple, and, as regards medicine, merely nominal. The bowels were kept moderately relaxed by saline aperients: when the rash was vivid, and the heat intense and distressing, tepid sponging was employed to the great comfort of the patients: if, on the contrary, the rash appeared but faintly, a little ammonia was given in a diaphoretic mixture: an ammonia lini-

* Subsequent to the delivery of this lecture, a series of preparations and drawings, and cases illustrative of these two pathological states, were laid before the Pathological Society of Dublin, (See Dub. Journal,) and later still I have had the satisfaction to observe that Dr. Addison, the distinguished Physician of Guy's Hospital, has arrived at similar results, in arranging the two classes of disease.

ment was applied to the throat, if the fauces were inflamed. The patients were generally kept cool as long as the rash continued, and warm, with flannel next the skin (when it could be obtained), with a view to prevent succeeding anasarca, for two or three weeks after the exanthem had disappeared. In consequence of the employment of these means, I believe it was that very few cases were followed by anasarca. I have already said that a great number of cases in the district were so mild as not to require medical assistance, and as, in some instances, not even to have attracted the notice of the parents of the children affected. In such it was only after application for advice for some succeeding complaint, that, upon investigation, it appeared evident that the children had suffered from scarlatina. Death, in the fatal case, arose from inflammation of the brain. A marked illustration was afforded by it of the fact, that accidental complaints, affecting the system generally, fall with the greatest violence upon organs which have been previously injured by disease, or, in other words, that the weakest parts suffer most. The case is very briefly as follows:—H. L., aged three, a child with dark hair and eyes, who, two or three weeks before, had recovered from a severe and dangerous attack of meningitis, contracted scarlatina from her brother and sister, who passed through the complaint very favourably. Nothing remarkable accompanied the premonitory symptoms, excepting an increase of her natural excessive peevishness and irritability. The rash appeared faintly on the face and trunk on the second day. On visiting her the next morning, I found the skin pale, the eyes heavy, the head hot and painful; that she was exceedingly restless, complained of the light, and frequently screamed; the tongue was thickly coated, and the pulse frequent, small, and sharp. She was ordered a hot bath, leeches to the temples, a cold lotion to the head, an active purgative, and small repeated doses of calomel and antimony. My directions were but indifferently attended to, and my efforts feebly seconded: the rash did not reappear; no relief was obtained; the child became partially comatose, and died on the sixth day of the disease, and the third after the retrocession of the rash. Permission was not obtained to inspect the body.

Sequelæ of Scarlatina.—The only affection I shall notice under this head, and, indeed, the only one of importance I have been called upon to treat during the past year, is anasarca. This, in the district to which these observations apply, and, I believe, in the metropolis generally, has been exceedingly common. The children labouring under the complaint have, in a great majority of instances, been brought to the dispensary: with the exception of the case of an adult, who, from his former habits, combined with the state in which the kidneys were found after death, I believe must have suffered from disease of those organs before the attack of scarlatina, and whose case has, therefore, been introduced among those of renal dropsy, the whole have terminated favourably. It is, I think, the custom of medical men to regard this affection too lightly. It is true it is usually amenable to a great variety of treatment: thus the cases of one practitioner are said to do well under the tonic; those of another, under the diuretic plan of treatment; a third gives these remedies combined; and a fourth trusts to purgatives. Gentian is infallible with one; digitalis, or a combination of the two, is regarded almost as a specific by another; nitric acid, digitalis, and calomel, are especially advocated by some; and “they all get well with purgatives,” is confidently stated by others. It appears evident, I think, from this variety of treatment, that no very definite notion is entertained, by the profession at large, of the pathology of this affection; and, as cases occasionally occur which terminate fatally, and probably more frequently in which the germs of important disease in the kidneys are then for the first time introduced, I may, perhaps, be excused for directing a few observations to the subject.

In 1818, a paper appeared in the Edinburgh Medical and Surgical Journal, from the pen of Dr. Abercrombie, in which the author stated his belief that acute dropsy, cured by bleeding, and accompanied by coagulable urine, was dependent upon inflammation of the lungs: the opinion was supported by dissections. In the same paper were introduced cases of anasarca, following scarlatina, which were supposed to arise from the same cause. Dr. Bright's great discovery had not then been made, or had not been made public. It is possible,

therefore, that since that time Dr. Abercrombie's views upon this subject may have undergone some change or modification. I must, however, with all deference, express my dissent from the opinions then entertained by this celebrated physician. That the anasarca following scarlatina, and indeed that the acute dropsy generally accompanied with coagulable urine, and which is removed by venesection, is not dependent upon inflammation of the lungs, is, I think, sufficiently proved by the facts, that, in many examples of these forms of anasarca, there is no important disease, and in some no affection whatever, of the respiratory organs; and that cases of pneumonia equally severe, and equally sudden with those accompanied with this affection, are constantly occurring without any traces whatever of anasarca. A remarkable case, in proof of this, will appear in the course of these reports, under the head of pneumonia. That inflammation of the lungs often accompanies these cases of anasarca is undoubted; but it frequently first appears in the progress of the complaint, and, in many instances, only in the last stages of the fatal cases.

That the anasarca following scarlatina, as well as that of an acute kind, removed by venesection, is principally connected with, if not essentially dependent upon the suppressed secretion of the skin—in the one case, long continued, in the other sudden, and occurring while perspiration exists upon the surface—has long been my opinion. I shall, however, confine my observations almost entirely to that succeeding scarlatina. The sequence of the pathological conditions in this complaint, I believe, after some consideration, to be briefly and simply as follows. After the rash of scarlatina has disappeared, it is well known that the skin usually remains, for several weeks, in a harsh, rough, dry, unperspirable state, which is sometimes conjoined with frequent and long continued exfoliations of the cuticle. The natural cutaneous secretion is, in a great degree, or almost entirely, suspended. An increased quantity of fluid is probably, in consequence, exhaled from the lungs. This compensatory action, however, of the pulmonary mucous membrane, is only partial; and some portion of the fluid, which, in the healthy state, is separated from the blood by the vessels of the cutis, and

passes off as sensible or insensible perspiration, slowly accumulates in the cellular membrane beneath it. At the same time, or perhaps generally at a period prior to this event, the other excreting organs of the body become overcharged, a larger supply of blood is sent to the kidneys, and a state of active congestion of these organs results. The vessels of the secreting portion of the organ become dilated, and allow of the escape of the albumen or red particles of the blood, which almost constantly exist in the urine of these cases, but are usually not found in dropsy unconnected with any affection of the kidney.

After a time, the effused fluid being removed by purgatives, the skin resumes its healthy functions, and the kidneys generally a few days or weeks afterwards secrete urine of a natural character; but it appears probable that a dilated state of the vessels, or a passive congestion of these organs, may be sometimes left behind; and the probability is supported by the bloody or albuminous condition of the urine which often remains after every other appearance of disease has ceased. This state of the kidneys usually disappears almost spontaneously in healthy subjects; but in persons predisposed, and in others in whom the disease is neglected, it may go on, I feel assured, to organic changes of structure, and may be the cause of incurable and unmanageable complaints.

The view of the pathology of the complaint above detailed is sufficiently simple, and to myself appears, independently of confirmatory facts, to be exceedingly probable. The only objection that I have heard urged against it, of any weight, is the circumstance of the anasarca and coagulable urine not usually appearing until the seventh or tenth* day after the rash has ceased. It is asked, if the suppression of the cutaneous secretion is the cause of the anasarca, why does it not come on immediately? why, as in some cases of acute dropsy, is it not produced in a day? This is indeed a difficulty; but, I conceive, not an insuperable one.

Cases of acute dropsy, I believe, ge-

* I have assumed that the coagulability of the urine does not appear till some days after the cessation of the rash, as I believe it is by no means common to have coagulable urine, as stated by some authors, during the progress of either scarlatina or measles. I have examined the urine, while the rash existed, on several occasions, and never found it to coagulate, at least in children.

nerally occur from the sudden exposure to cold, while the body is heated, or the surface covered with perspiration. The vessels of the cutis are thereby suddenly contracted; the skin is hot, but it is pale; hot, because the cooling effect of perspiration and evaporation is not in operation; and pale, because the red vessels are reduced in number and in size. The consequence of this sudden suspension of the action of the cutaneous vessels is an almost equally sudden effusion below the cutis, and simultaneous congestion of the kidney. During scarlatina, on the contrary, a much larger than the ordinary quantity of blood is sent to and returned from the cutis itself; and it is probable that the cellular tissue below, far from being in a congested state, is even less turgid than in the natural and healthy condition. After the rash has disappeared, though the circulation in the cutis is certainly not *natural*, it is not, I think, really deficient; and, though its *healthy* secretion is not eliminated from its vessels, some secretion takes place, as is evidenced by the abundant and repeated separations of cuticle. It would then, I think, appear, *à priori*, not improbable, that in the one case the sudden suppression of the action of the skin might cause a sudden effusion below the surface, and an equally sudden congested state of the kidneys, and in the other, though the skin remain dry and harsh, and its action be changed in character, and deficient, but not materially decreased in amount, that the morbid effects might be less active in their kind, and more tardy in their appearance. That this form of anasarca is chiefly connected with decreased or disordered function of the skin is, I think, confirmed by the following considerations:—To no eruptive complaint does anasarca so commonly succeed as to scarlatina, and in none does the unperspirable state of the skin exist to so great a degree, and remain for so long a time. Where anasarca exists the skin is always harsh and dry, and when the functions of the skin begin to be properly performed the anasarca ceases. The anasarca is very quickly and advantageously removed, by the administration of such medicines, and the use of such means, as alter and increase the secretion of the skin. The anasarca appears to be in many, and probably might be in most cases, prevented by the use of vapour or warm

baths, flannel next the skin, diaphoretic medicines, and the adoption of such other measures as have a tendency to restore the healthy action of the surface. It is to the milder forms of the complaint that anasarca usually succeeds, where the action of the skin remains dry and torpid for several weeks; while in those examples of the complaint in which the rash is very vivid, the skin intensely hot, the subsequent separation of the cuticle abundant and quickly completed—where, in fact, the skin speedily resumes its healthy action and natural secretion—no anasarca (at least, according to my observation) is found to succeed. It does not materially affect the force of these confirmatory facts to acknowledge that the complaint is frequently removed by other means than those referred to; as, in a great majority of cases, the skin spontaneously resumes its healthy functions after the expiration of two or three weeks; and as the remedies employed only remove the effused fluid, the simple result, the mere effect of some pathologic condition, which, whatever that condition may be, is to be regarded as the real disease.

This anasarca, as I have before hinted, usually appears after the less severe forms of the complaint. In not a few, indeed, the dropsical affection, together with the previous history, as the existence, a week or two before, of sore throat, some febrile affection, and the prevalence of scarlatina in the immediate vicinity, has been the sole cause for believing that the patient had passed through the disease. In some even this sort of evidence has been wanting; but if scarlatina prevailed at the time, knowing the occasionally extremely mild character of the complaint, I have usually concluded that the rash, and the attendant fever, had passed without notice. In this I may sometimes have been mistaken, as children as well as adults are, I suppose, liable to idiopathic acute dropsy. I think I have also observed, that where considerable enlargement, and particularly suppuration of the glands about the throat, have occurred, patients have been less liable to the anasarcaous effusion.

The treatment I have adopted in these cases, and hitherto with uniform success, has been founded upon the opinions detailed above. If pain or tenderness of the loins has been complained of or discovered, leeches or cupping glasses, and

afterwards a warm poultice, have been applied, with a view to relieve the congestion of the kidneys. At the same time, the warm bath, antimonials, and flannel clothing, have been ordered, for the purpose of reproducing a more healthy action of the skin; and the bowels have been freely acted upon by the compound jalap powder. By these means the anasarca has been rapidly removed; and, a few days afterwards, the albumen, or red particles in the urine, have generally disappeared. If, however, after the entire removal of the anasarca, pain, and febrile excitement, and the restoration of the external function of the skin, there has remained a dark, dingy colour, with a coagulable state of the urine, which I have then supposed to result from a passive congestion of the kidneys, I have prescribed tonics and mineral acids with good effect.

The real condition of the kidney in this complaint, and its similarity to the affection of these organs in the early stage of the morbus Brightii or mottling, appear to me very important questions to decide, as, if the pathological state of the organ is analogous or identical in the two cases, differing in the mode of attack more than in the nature of the disease itself, in the degree more than in the character of the affection, it appears evident, seeing that the disordered action of the organ following scarlatina is removable by appropriate treatment, that the state which leads ultimately to mottled degeneration, may, if discovered sufficiently early, be removable also by the same means. I believe that all, or nearly all the fatal cases of anasarca following scarlatina, that I have seen examined after death, have occurred in subjects in whom it has been doubtful whether there had not previously existed important derangement or disease of the kidney; as they have been youths or adults exposed to the more common exciting causes of that complaint—as pot-boys at public houses, or other persons who from their occupation were supposed to have indulged in the use of spirituous and fermented liquors. It is on this account (the belief in pre-existent disease), that I have introduced a fatal case of my own, among those of renal dropsy. But as scarlatina even in these cases evidently brings disease into active operation which had not been even noticed before, and thereby hastens, if it does not induce the fatal result—as the

kidneys are almost always found diseased in cases where only suspicion exists, and especially as, in some cases published by Dr. Christison, Dr. Barlow, and others, the organs were found in the early stage of mottling, where no suspicion, nor any evidence whatever, existed of any preceding affection of the kidney—there seem to be sufficient grounds for believing that the diseases are at least of a similar character, if not absolutely identical. Every practical physician is acquainted with the great susceptibility of persons suffering from renal dropsy to the action of mercury. I am not in the habit of prescribing mercurials for children suffering from scarlatinous dropsy, and, therefore, am not able to say if a similar susceptibility exists in them. An accident in one case, however, induces me to believe that it may be so. I was attending a child about four years old with this complaint, and at the same time his younger brother, an infant, for inflammation of the membranes of the brain. For the latter, powders containing one grain of calomel were prescribed every six hours, and taken with good effect, but without any action upon the mouth or tongue. On paying my visit to them one morning, I was surprised to find the elder boy rather severely salivated, as by my orders he had taken no mercury in any form. Upon inquiry, I found that for the sake of the sugar with which they were mixed, he had taken *three* of his brother's powders, and that to these alone could be attributed the salivation. I have also seen, though rarely, an affection of the head occur during the progress of anasarca following scarlatina, very similar to that which is so frequently witnessed in the latter stages of renal dropsy.

The cases of the disease which I have seen at the dispensary during the year have presented nothing of sufficient interest to be here recorded. To relate them, therefore, would be merely to repeat in reference to individuals what I have already stated generally in the preceding part of this paper. I, however, introduce three other cases of the complaint, as they appear especially suitable as illustrations of some of my observations.

Miss E. P.—, aged 3, about ten days after having passed through mild scarlatina, had together with her sisters the ordinary form of anasarca, for which

she was treated as the others with aperients, diuretics, and tonics. Her sisters perfectly and speedily recovered. The anasarca in this child, however, continued, notwithstanding the treatment employed, for several days without diminution. After an unquiet night, she was one morning, at 8 A.M., attacked with pain of the head, heaviness, partial insensibility, and some convulsion; for which leeches were applied to the temples, and purgatives administered. I saw her for the first time in the afternoon of the same day, in consultation with Mr. Parry, of Newington: the head had been considerably relieved by the leeches, but her expression was still languid and heavy; the pupils moderately dilated, and slowly acting on the admission of light; the face was pale and bloated; the legs and entire body œdematous; the skin pale, hot and dry, without cuticular exfoliation; the tongue was rather coated, pale and moist; the pulse frequent and sharp; she had considerable tenderness in the loins on pressure; the urine was sufficiently abundant, but of a dark purplish brown colour, with a purple flocculent sediment, and highly coagulable by heat. She was ordered two leeches and a warm poultice to the loins, to be put into a hot bath, and afterwards in flannel; to take a compound jalap powder directly, and a diaphoretic mixture, containing antimony, three or four times a day. The following morning the head affection had almost disappeared, the bowels had been very little acted on, the swelling and urine were as before, but the tenderness in the loins was much relieved. The bath was repeated every evening, and the other medicine continued for two or three days, after which, though there was much difficulty in maintaining a free action upon the bowels, she complained no longer of the head or loins, the anasarca quickly subsided, the skin became soft, and she perspired freely after the bath: in fact, she felt and appeared in every respect better, but the urine remained unchanged.

After pursuing the same plan for two or three days longer, we were induced to add a drop or two of tr. digitalis to the mixture. The urine the next day was clear, and of a cherry-red colour, but still coagulated freely. The digitalis was suspended, and some nitrate and tartrate of potass administered in a bitter infusion, the bowels being moved by powders or aperient draughts when

necessary. The health continued daily to improve, but the urine resumed and maintained for several days its former dark and dingy character. She was afterwards ordered some diluted sulphuric acid in a tonic mixture, without any effect upon the urine. The acid was afterwards replaced by the nitric, under which, though not till after several days, the urine became natural in appearance, and lost its coagulability, and she appeared to be quite well.

Alfred Sheldrake, aged 7 years, a lad of light complexion and cheerful disposition, came under my care November 9, 1838. His face was then pale, and rather swollen, particularly under the eyelids; his legs œdematous; his skin smooth, pallid, hot, and dry. He complained of pain and tenderness on pressure in the loins; his tongue was clean and pale; his appetite good; bowels open; pulse 110, small, and sharp. His urine was small in quantity, of brown colour, without sediment, and freely coagulable by heat. I was informed by the mother, that, about five weeks before, he had a scarlet rash upon his body, for which she got a powder from an apothecary, but that he had not complained of sore-throat, nor appeared even unwell; and that a week before my visit she had first observed his eyelids to be puffy in the morning, his legs to swell, and his urine to be dark coloured.

Ordered, *Hirudines* iv. *lumbis* et *postea* catapl. *Lini*; *Pulv. Jalap.* \mathcal{C} . \mathcal{O} j. mane quotidie.—*R* Tr. *Digital.* \mathfrak{m} ijj.; *Magnes. Sulph.* \mathcal{O} j.; *Vin. Antim.* \mathfrak{m} xx.; *Liq. Am. Acet.* \mathcal{S} ij.; *Aq.* \mathcal{S} vj. ter die sumend. To be clothed in flannel.

13th.—Bowels not freely moved; skin still hot and dry; pain of loins less.

Rep. Mist.—*Augeat.* *Pulv.* ad \mathcal{S} s.—*R* Ext. *Hyosciam.* gr. iiss; *Antim.* *Potassio Tart.* gr. $\frac{1}{2}$, ft. pil. o. n.

15th.—Bowels relaxed; more pain of the loins; no other change.

App. Hirudines iv. *lumbis.* Pergat.

20th.—Skin still hot and dry; urine still dingy and coagulable; complains of pain in the loins, and tenderness on pressure; anasarca reduced; appearance animated.

C. C. lumbis ad \mathcal{S} vj. Pergat.

29th.—Pain of loins nearly gone;

urine lighter in colour, still highly coagulable; skin soft; anasarca removed; some sickness after medicine.

Rep. Pulv. Antim. Tart. gr. 4, form. pil. ter die sumend.

Dec. 8th.—Had been going on well; had no pain, and no sickness; urine clear, slightly coagulable.

Rep. Pil. bis die ex Inf. Calamb. 3ss.

18th.—His urine having been for some days quite natural in colour and other characters, his pain having entirely ceased, his skin being soft, his colour having returned, and his strength having improved under a more liberal use of tonics, he was, with many cautions as to cold, discharged convalescent.

Mary Sheldrake, aged 3, sister of Alfred, whose case has been sketched above, came under my care at the same time. She had not suffered from sore throat; had not been previously ill, nor had any rash been observed upon her body. She was affected with exactly the same symptoms, though in a somewhat milder form. Her urine was of a cherry-red colour, and clear, but very coagulable by heat, and she complained not of the back.

R Liq. Am. Acet. ʒj.; Julep. Menth. ʒj.; Vin. Antim. ℥x. 6tis hor. sumend.; Pulv. Jalap. C. gr. xv. mane quotidie.

Two days after, the symptoms being unchanged, and some tenderness appearing to exist on pressure in the loins, two leeches were applied, and she was ordered to continue her medicine.

November 19th.—No change: bowels relaxed; medicine causes sickness.

R Antim. Tart. gr. iss.; Sacchari Alb. gr. xxx. ft. Pulv. viij. e quibus capt. ter in die. Rep. Hirudines et Pulv.

22d.—Urine had lost its red colour, and was less coagulable. Skin soft; anasarca removed; no sickness; no pain. After this she gradually improved, and on December 4th had no complaint but a slight cough.

Whosoever has seen such cases as the preceding, and I think there can be but few in extensive practice, especially among the poor, who have not seen several, will not, I believe, assent to the opinion of the anasarca following scarlatina being always a trivial complaint. There can be little doubt, I think, that had the disease been allowed to go on unchecked by remedies, important struc-

tural lesions of the kidneys would have resulted. The two last cases were more obstinate than any I have been called upon to treat; but it must be recollected, that, from the history of the cases, the disease had probably existed for at least two or three weeks when first visited by me. The former of these two cases is, I think, the only one in which I have prescribed digitalis, combined with other remedies, in the *acute* stage of the disease: from its operation on that occasion, I have not felt inclined to give it another trial.

14, St. Thomas's-Street,
May 27, 1840.

AGENCY OF SOUND ON THE EAR.

To the Editor of the Medical Gazette.

SIR,

I TRUST that the unavoidable delay* that has occurred since my last communication will not exclude the following from a place in your excellent miscellany. So soon as it may appear, I shall have to trouble you with such observations as I have been enabled to make on the labyrinth of the human ear.

I am, sir,

Your obedient servant,

W. SHAND.

Blythswood Square,
Glasgow, May 6, 1840.

If mankind be pre-eminently distinguished from the lower animals by the privilege of speech, in connexion with their reasoning faculties, and are thereby enabled to communicate their knowledge to each other, and the intelligent sounds by which this is effected be the offspring of matter in a state of action, it is most material to ascertain what is the nature of this matter, and the mechanical arrangements which produce these effects; tracing causes and effects, not only in the organ of hearing, but from the source of production to the nerve of hearing, which is believed to be the last vehicle of communication with the brain; because, if there be not any perversion of nature in the organ of hearing, derangement can only take place in external bodies.

Sound is not produced by the atmosphere alone in its general state, but by

* See vol. 24, p. 608.

bodies more dense in contact with the atmosphere.

It follows that it cannot be produced in or conducted by a vacuum, nor can it emanate from or be conducted by a still body, because it can only be continued by agitation and atomical action throughout bodies*.

It is the effect of the atoms of bodies acting upon each other, while undulatory motion is composed of a certain number of atoms moving together, and the completion of an undulation terminates a distinct sound. These two actions appear to pervade all matter in a state of agitation, but are little understood except in the musical string, and as connected with music.

In all cases it is difficult to reason upon the operations of nature, and the motions and influence of bodies not perceptible to the eye. In the present case, however, we are enabled to judge partly by our ocular faculty, and in part by our sense of hearing. That the vibratory and undulatory actions universally prevail, whether sound be produced or not, is evinced by the following circumstances:—

A musical string of a certain diameter, whether of metal, or animal, or vegetable fibre, when set in motion is formed into waves or undulations, and the extent of these are in the ratio of the length of the string; each undulation gives out a distinct sound, conformable in duration to the extent of the undulation.

The cause of the separation in sound, and that it continues just so long as the string is in motion, is demonstrated by the simple fact, that if a bit of paper or any small light body be placed on the nodal point between the undulations, it remains on the string; but if placed on the wave it is thrown from the string. In the flat brasses of a musical box, the action and sounds are regulated in like manner by their length, but differing somewhat in the undulations, because in the former case the string is fixed at the two ends, from which there is a more determined reaction; while the vibrating brasses being fixed at one end only, there is a difference in the action. This motion is apparent in a rope or cord: when stretched on the ground, in order to define a straight line for any purpose,

the line is stretched by a vertical motion of the hand, a single motion of which produces many undulations in the cord, according to its length.

This action differs in bodies, not only according to their form, but in conformity to their component parts; there is however one general principle of action throughout. This is apparent in the lath and plaster of the walls and ceiling of rooms, in which the undulations are extended in the ratio of the expanse of surface exposed in any one place to the impingement of sound, and accordingly the reflections of the voice of a speaker are found to be more or less in unison with articulation in different apartments*.

These simple facts not only demonstrate more perfectly than the musical string, that sound emanates from the cohesive and repulsive action of atoms, but that sounds cease with action, and that there are intervals of rest in this case as well as in the musical string.

The same principles of action are exhibited in aqueous fluids, where the waves are of more or less duration and extent, according to the expanse of water. In the ocean the wave is of greater magnitude than in waters of more limited extent, and the waves are most extended wherever there is a deep indent in the land†.

Sound here also ceases when the action of the wave is exhausted. These circumstances are, however, most perfectly defined by the atmosphere, because distinct and original sounds are by it transmitted in all directions with the least change in their character, and if analogical reasoning is to be applied in this case, and it is admitted that sound is only produced by the action of bodies on each other, and ceases the instant that these become still in it, there must be spherical intervals at rest, during vibratory motion, in order to keep sounds apart, in conformity to their original formation. Thus the Creator

* Some say that the greater the intensity of reflection from surrounding bodies, the more aid is given to speech, without a single remark as to regulating reflections. Others are of opinion that the force of the voice on the air contained in a room is alone to be relied on.

These ideas are not merely inconsistent with each other, but alike erroneous, as has already been explained, and will be more fully when I treat of the economy of speech in apartments, to which my attention was first directed.

† Were the motion in the water ruled by the current of air only, the waves would move in the same uniform direction; but this is not the case.

* Being exhibited by a peculiar arrangement and sudden explosion of the component parts of the atmosphere, cannot be considered an exception to the general rule.

has adjusted and regulated the atmosphere for these purposes; but in all artificial materials it is left to man to economize his arrangements according to the dictates of nature.

If sound be not produced by the atmosphere alone, and is not reflected but by more dense bodies; if it cannot pass through any tubular formed mechanism, without increasing or diminishing intensity; if it cannot be produced in a room without changing its character, by the influence of surrounding solids; if it is produced and conducted by all hard bodies and dense fluids, with more power and rapidity than by common air; it seems remarkable that so much is attributed to the influence of the atmosphere, and so little to more dense media. Notwithstanding these facts, physiologists, in considering the economy of sound or speech in rooms, merely advert to the form of an apartment, without considering the nature and effects of surrounding solids, which reflect and influence speech in conformity to the constitution of their component parts. It need not therefore surprise, if the physical properties of the human ear, in many cases minute and scarcely perceptible, and so nearly approximating to the nerve of hearing, should be little understood.

Towards the end of his luminous career, Sir H. Davy remarked, "In regard to dead matter, we know but a few laws or principles; but whenever we approach life, we must end where we begin, by acknowledging our own ignorance."

Without, therefore, considering the most momentous of all changes, from life to death, it may here be remarked that we cannot dissect the organ of hearing without deprivation of its two most necessary sonorous properties, moisture and tension.

It has already been noticed, that comparative anatomy, without a knowledge of fundamental principles, or a sequence of facts which we do not possess, can only perplex the mind. I would here readvert to the following obvious facts, in order to demonstrate the fallacy of reasoning that is generally adopted in the case:—

By the most acute philosophers it has been admitted that sound must be produced by vibratory action; that the instant action ceases, sound also ceases; and yet it is argued, that not only the pinna of the ear on which the sonorous

vibrating atoms of the atmosphere impinge, but the surrounding solids which form the tube in the external ear, are still and without motion; and all this reasoning is adapted to the preconceived idea, that the impulse given to the atmosphere must necessarily communicate sonorous impressions to the pelt of the drum, without occasioning vibratory action in the pinna. But, says the anatomist, you take the most circuitous course to reach the nerve of hearing. It is not so; and my argument in this case is, that instead of being collected on the sinuous surfaces of a body without action, and bearing no analogy to any other external body producing such effects, corresponding vibrations are instantly communicated to the pinna (as is the case in the instance of the stethoscope) and transmitted to the fluid in the internal ear by the most intense and rapid conductors, and not by the medium of air which is contrasted with the gristle, bone, membrane, and moisture, less sonorous and more tardy in action. If there be not truth in these remarks, all the principles which I have been endeavouring to establish are fallacious.

It is, however, difficult to remove early impressions instilled into the mind, and which had been received as truth to demonstration for many succeeding generations; and it may, therefore, be proper to extend my observations on sound, as it is ruled in matter with which we are most familiar.

Philosophers search the depths of the ocean, or scale the universe, in order to discover the laws of sound; but surely it is to those bodies which approximate nearest to the ear, and make most impression on the sense of hearing, that our attention should chiefly be directed.

When the common cart is rattling along the pavement, is it not the cart and the pavement that produce sound? and is not every atom of both these bodies in motion so long as the sound is heard? and are not both these bodies more potent and rapid conductors than the atmosphere? It is necessary that the atmosphere should be in connexion with these hard bodies, to produce it; but, in their absence, would sound be produced? or if the cart were moving on a soft instead of a hard body, would not the vibratory action and sound be less? Is it not then the solids, and not the

atmosphere, that give out sounds? and are not these regulated by the nature and form of the solids, and every atom of which they are composed? When glass windows vibrate, and, by their prolonged action and reflection, drown speech in an apartment, are we to conclude that it is the atmosphere that produces these effects?

But I will give an experimental illustration of this, yet more in point. At a public dinner a short time ago, my seat happened to be at the other extremity of the room from the principal speakers. On the side of the table behind me was a dead wall, and, on the opposite side, three windows, with large panes of glass. When the speakers directed their voices to the end where I was, the windows being open to the direct impulse of their voices, not a syllable of what they said was understood by me, or those who sat near me, because of the prolonged and powerful reflections from the glass; but when those at that end of the room spoke, whose backs were towards the windows, and their faces towards the wall, I heard them with sufficient distinctness, because the wall had less vibratory action than the glass: would the same influence have been produced in the absence of the glass? And yet, in judging of, and in our endeavours to regulate, speech in apartments, it is usual to consider the mere form of a room, and not the nature and influence of the surrounding solids, and to reason as if every effect were dependent on the atmosphere only. Are not causes and effects similar in regard to musical wind instruments? Do not sounds differ in conformity to their form, dimensions, and component parts? and are not these produced by the action of the atoms of which the instruments are composed, although the yielding principle of the atmosphere allows vibration in the solid, and air is the medium by which sound is transmitted to the ear? When the bosom of the little canary bird is agitated during song, and its loud and harmonious notes afford pleasure to the listener, are these the effects of the plumage that is presented to the eye, or of the wind-pipe and mechanism connected with it? and does not every atom of these act its part?

When song or speech is produced by the mechanism with which we are furnished for this purpose, are these the effects of the breath alone, or is it only

the power which sets in motion the whole component parts of the wind-pipe, and the cartilage and membranes connected with it? Nearly every part immediately connected with the human ear is more intensely vibratory and sonorous than the central parts, and yet we give the preference to these last, notwithstanding these facts, and that there are so many insurmountable obstacles in its way.

It may be asked, how is it that the reflections of the human voice produce such fatiguing influence on a speaker, but do not agitate the pinna, which is more elastic than the external parts of the mouth, and it is an expanded lever, exposing much surface to the direct influence of sound, and resting on a sonorous fulcrum, the base of which is directed towards the nerve of hearing. It may also be repeated, that it is composed of the same materials as the windpipe, with an additional proportion of liquid, which at the temperature of the human body is not only a more powerful and rapid conductor of sounds than air, but conjointly with solids appears to be susceptible of arrangement for the preservation of the original character of sounds, as exhibited in the ear itself.

I shall now make some observations on the eustachian tube, which passes from the gullet opposite to the nasal openings, to the cavity in the central part of the ear. Regarding this attuner of the voice, physiologists also reason as if it were a fixture, without vibratory action, and as if the aerial passage were the prevalent medium through which sound acts, and not the solids of which it is composed.

Here, as in the external ear, it is advanced, that any impediment within the tube is fatal to its conducting power; but in both cases this depends on the obstruction being such as to arrest vibratory action in the solids.* In fact, sound is transmitted by this tube as by the stethoscope.

If it be admitted, that through sonorous solids the transit of this phenomenon is from 10 to 16 times more rapid than through common air, and its intensity exceedingly greater, it is an inversion of nature to suppose that air in this case is the medium of conduction.

* This is exemplified by pressing the point of the finger on the lip of a tumbler or goblet in a vibratory state.

It would be equally fallacious to say, that what is termed a non-conductor of heat transposes it more readily and with more effect than a rapid conductor, or that which is most permeable to heat. There is no such thing as a non-conductor of heat; nor is there any non-producer or conductor of sound; but we must reason on both these phenomena by contrast, and according to the measure of effect produced in different bodies.

This tube, towards the mouth, is cartilaginous and trumpet-mouthed, consequently, powerfully sonorous, but contracts towards the ear, and is of hard bone, like the external canal in the ear; the effects of which must be to prevent the prolongation of sound that would be produced by the extension of the gristle internally. It does not contain anything to impede or derange sounds, as in the canal of the external ear; and they may, by certain means, be conducted with intensity of effect through this channel. It is by this course that we are enabled to regulate the tone and pitch of our own voice, of which many proofs may be given; but the two following instances may be sufficient.

If a nut, or anything hard, be cracked between the teeth, with the lips shut, the sound is heard loud and distinct in the ear; but the ear of another individual placed near to the mouth of the person who cracks the nut may not hear it.

The next illustration, however, is more in point, and not only evinces facility in the eustachian tube to transmit sound to the ear, but the predominant power of solids over common air in conducting sound.

I have a letter in my possession, from a person in Stonehaven to a clergyman in Aberdeen, wherein it is mentioned by the writer, that he is so deaf that when there are 2000 people in church, and most of them singing, he is no more sensible of sound than if the church were empty; but by using a piece of wood of the form and size of a large tuning fork, placing one end of it on the ledge of the seat, and the other end in contact with his teeth, he not only hears, but is enabled to join in the tune. The facts of this case are consistent with my experiments on the stethoscope and the ear, as given in the *Medical Gazette* of the 29th June last, and these evince not only the power of solids beyond that

of the atmosphere as conductors, but that in both cases sound is communicated to the nerve of hearing by vibratory action in the solids of the eustachian tube and the ear, in conjunction with the denser fluids that are in immediate contact with the sonorous solids.

Previous to concluding my present observations, and entering upon the labyrinth, I shall make some remarks on the partition which separates the central from the internal ear; because the properties and arrangements are very different in the labyrinth to those in the central parts of the external ear, and the cavity of the tympanum, the former being a combination of solids and aqueous fluids, and the latter of solids and aerial fluids.

It may be noticed, that what is considered to be the principal conducting media in this bony partition, had been very imperfectly understood, until M. Savart lately discovered, that the two openings in the bone, which are termed the fenestra, are filled with double membrane, with air between these, and that they are connected by a minute tube, also filled with air, which is not only comparatively a tardy messenger, but all peculiarly thin membranous bodies, in connexion with air, produce a repetition and prolongation of sound, as do sonorous solids approaching to a circular form, and the fenestra being of different forms, must also occasion different sounds. This mechanism is extended, longitudinally, in a transverse position to the direction of the labyrinth, and nerve of hearing, which I must also consider inimical to the transmission of distinct sounds.

According to Savart, the last link in the chain of bones in the tympanic cavity, the stapes, is affixed to the outer membrane of the fenestra ovalis, while the inner membrane is attached to that which lines the vestibule. The interior membrane of the fenestra rotunda is connected with that which enters and lines the cochlea, and the whole is set in motion by the pulsations of the external air upon the membrana tympani. As previously suggested, the effect of this, probably, is to produce a slight degree of action in the aqueous fluid in the labyrinth, and an influence similar to what is occasioned by a gentle current of air in increasing sound in the direction of the air, of which we are frequently sensible during the ringing of the church

bell. It seems consistent with this idea, that if no such cause exists in the atmosphere to produce this effect, sound is diminished, but not deranged; and it is said, that this mechanism in the ear, from the external membrane of the tympanum to the stapes inclusive, may be destroyed without material diminution in the sense of hearing.

If this fact be established, it appears to me alone sufficient to demonstrate, that predominant and intelligent sounds are not conducted in this direction.

CASE OF SERO-CYSTIC TUMORS OF THE BREAST,

REMOVED BY OPERATION; WITH OBSERVATIONS ON THE PROPRIETY OF OPERATING IN STATES OF PROSTRATION FROM EXTREME APPREHENSION.

By T. B. CURLING, Esq.

[For the London Medical Gazette.]

A RESPECTABLE female, residing at Hoxton, of healthy appearance, spare form, and between 40 and 50 years of age, consulted me, May 28, 1833, for an enlargement of her left breast. She informed me that she had been confined about four months previously, soon after which her breast became enlarged and painful. She continued, however, to suckle her child, and by the advice of Mr. Amsden, her medical attendant, applied to the swelling leeches and cold lotion, and afterwards a poultice. On examination, I found a considerable defined tumor of the breast, which, when handled, gave an obscure sensation of fluctuation. It was tender, and the patient occasionally experienced sharp aching pains in it. The skin covering the most prominent part of the swelling was livid, and the neighbouring subcutaneous veins were enlarged. Her general health was unimpaired. Mr. Amsden had attempted to lance the tumor, but the patient suddenly checked his hand, so that only a little blood issued from the slight wound which he made. Suspecting the presence of fluid, I was anxious to introduce a grooved needle, in order to ascertain its nature; but she was so remarkably timid that I could not prevail upon her to allow me to do so. I suggested local treatment, of a mild antiphlogistic nature, and expressed an opinion that the swelling would not disappear without

something operative being performed. Frightened by my advice, she did not call again, but placed herself under the care of a woman who pretended to cure cancer, and who applied to the part a highly irritating plaster. About six weeks after I first saw her, Sir W. Blizard and myself were sent for to visit her with Mr. Amsden. Her breast was then greatly swollen, and presented a large open fungoid sore, ulcerated and sloughy, with everted edges, and discharging an offensive matter mixed with blood. The glands above the clavicle and in the axilla were quite free from disease. Her general health was much impaired, and her countenance appeared sallow and anxious. Amputation of the breast was proposed, as the only means of affording relief and saving life; but it was obstinately rejected, the patient entertaining the greatest dread of undergoing any operation. A few days afterwards, however, the husband called to say that she had consented to submit to it.

July 13th.—We visited her about 10 A.M. to perform the operation, and found her apparently almost dead from excessive apprehension. She was faint, tremulous, and pallid, and her pulse was scarcely perceptible. After taking some wine and volatile alkali, she revived a little, but soon relapsed into the same state of collapse, in which she had scarcely power to articulate, "Why do you deceive me; why don't you go on?" After we had waited nearly an hour, finding her a little restored, Sir W. Blizard thought it desirable not to delay further, being of opinion that the stimulus of the operation would tend to arouse her, and that her depressed condition being the result of extreme dread, was not likely to be improved till the breast was removed. She was in the recumbent position, so that without disturbing her I amputated the breast as quickly as possible. After the first incision she revived a little, but soon became slightly convulsed. Very little blood was lost in the operation: about a dozen vessels required ligatures. When it was over, she expressed herself as feeling far more comfortable, and her pulse was decidedly improved in power. An opiate was ordered, and in the evening I found her calm and free from pain, and that she had dozed a little during the day. The tumor consisted of a fungoid mass, made up of a fibrinous de-

posit intermixed with coagula of blood and the natural tissue of the part. From the time of the operation she gradually recovered her health and spirits: part of the wound healed by the first intention, the rest granulated favourably, and it was entirely healed in about three weeks.

This patient remained in good health for upwards of two years, during which period she again became pregnant, and was safely delivered of a child, but she did not suckle it. Her husband afterwards got into difficulties, and was thrown into prison for debt, which caused her much uneasiness of mind. In the month of October, 1835, she called on me on account of a small tumor which had made its appearance about two months previously, a little below the cicatrix of the former wound. It was about the size of a hen's egg, tense, painful, fluctuated very distinctly, and was increasing daily. The skin covering it was of a livid colour. Its base was indurated, and closely adherent to the parts beneath. There was no affection of the cervical or axillary glands, nor evidence of disease existing in any other part of the body. She was a good deal out of health, and evidently suffering much from anxiety. I suggested to her the removal of this second tumor, to which she at once consented, but requested me, as her circumstances were now much changed, to obtain her admission into the London Hospital. I accordingly took her in, and performed the operation November 3d. The tumor being of much smaller size, its removal formed a less severe operation than the former one; and although she manifested great fear, and was slightly convulsed during its performance, it was borne much better. The tumor was found to consist of a smooth serous cyst, containing about an ounce of a thin fluid, darkened in colour by the admixture of blood. From the bottom of the cyst projected a small fungus, about the size of the end of the little finger. The surface of this fungoid excrescence was ulcerated, and, on making a section, it was found to be composed of coagulated blood and a whitish deposit, probably fibrin. The base of the tumor beneath was indurated; a firm deposit, very similar to that of the little fungus, being mixed up with the adipose tissue. The diseased part was supplied by some vessels of

rather large size, which required to be secured.

This case affords an interesting example of the sero-cystic tumor of the breast, the history of which has recently been given by Sir B. Brodie, with his usual accuracy. The disease is exhibited in various stages. When it was first developed, the swelling was seen to proceed from a simple cyst to form an alarming fungoid tumor, which, if not removed by operation, would inevitably have destroyed the patient in a short period. But the disease being purely local, the wound healed readily, and the woman was completely restored to health. In this affection, several cysts are liable to be generated, and the second tumor, which arose subsequently, afforded a beautiful specimen of the fungoid excrescence which springs up from the interior of the cyst, and which, afterwards increasing, gives so formidable and dangerous a character to the disease*. When the wound after the second operation had just healed, the patient was attacked with erysipelas, which happened to be very prevalent in the hospital. It commenced on the back; from which part it extended to the chest, abdomen, head, and right arm. After lingering some time under this fresh complaint, the patient died.

I have never performed an operation under circumstances so alarming as existed in this case at the time of the removal of the first tumor. The state of death-like collapse, evidently the result of extreme dread, would certainly have deterred me from proceeding, had I not been encouraged by more experienced advice. The operation proved, as had been anticipated, a stimulus, and served to arouse the patient from the deep prostration into which she had fallen. This case calls to my recollection the particulars of a case of amputation, performed in a similar state of the system. It occurred many years ago at the London Hospital, and is recorded by Sir W. Blizard, in a little book which is now out of date and print. The following is the passage in which it is related. "There is sometimes a state of dreadful apprehension concerning operations, even in persons of undoubted courage. An occurrence, some years since, at the London Hospital, will express this in a

* The preparation is preserved in the Museum at the London Hospital.

striking manner, and may convey some instruction. A foreigner was to have his leg amputated, on account of a disease in it, through which he was sinking. He was so reduced, that it was determined to perform the operation on his bed. At the moment of proceeding to the incision, he suddenly raised himself, fainted, and fell backwards. He thus continued some minutes, with a pulse barely perceptible. He then recovered a little, again started up, asked 'Is my leg off?' and, upon being told that it was not, fainted again. It was judged, that he would inevitably die from repeated fainting; that the operation, performed with due care as to loss of blood, would tend to rouse, instead of weakening the action of the heart and vessels; and that, therefore, it ought to be performed. It was done with as much expedition as possible..... The operation was entirely finished, when he again raised himself, and put the question as before. Being assured that his leg was removed, he instantly became cheerful, and fainted no more. He left the hospital perfectly well; and always declared, that he had not the least painful sensation from, or consciousness of, the operation*."

I have noticed the peculiar circumstances of these two cases, because they bear directly on a point of practical importance, viz. the propriety of performing operations on persons thus dangerously depressed by excessive apprehension. The state of system consequent upon great dread, or making up the mind to the endurance of painful operations, is related in some few instances to have had a fatal termination. Mr. Travers, in his work on Constitutional Irritation,† mentions that a man who was the subject of strangulated hernia, expired suddenly during the steps preliminary to the operation, though the circumstances were, in other respects, such as to afford the fairest prospect of relief. Some years ago, a patient of Mr. Headington's, who had an aneurism of the femoral artery, expired at the London Hospital, under similar circumstances. An operation was proposed, to which he readily assented. On entering the theatre, however, he fainted; some wine and water was given

him, which he distinctly swallowed, and the operation was proceeded in, the artery exposed, and the ligature applied, but not tightened. During the operation, it was observed that no pulsation could be felt in the tumor, but this was accounted for by the fainting. Before tightening the ligature, it was suggested by the operator to wait until the pulsation was re-established: some increased attention was then paid to rouse the dormant energies of the patient, and it was remarked, that the syncope had continued an unusual time. After the attempts had been sometime persevered in, a more attentive observation proved that he was quite dead*. In the first case it is not stated that the patient had exhibited beforehand any dread of, or reluctance to undergo, the operation, whilst in the second we find that it was readily assented to. The conduct and exclamations of my patient, and the man whose limb was amputated by Sir W. Blizard, previous to the operation, clearly expressed the mental agony which they suffered, and in this respect they offer a striking contrast to these two, who, in all probability, belonged to that class of persons who suffer the more by striving to repress the internal struggles of the mind. The success of the operation for the removal of the breast in the case which I have here detailed, tends strongly to confirm the soundness of the advice under which I acted, and the value of which, as applicable to other cases, is not in my opinion counterbalanced by the two fatal cases which have been adduced, since death took place before the operation had been commenced in one of them, and probably this was the case in the other. There are few occurrences in our profession more painful to the surgeon than a patient dying under the knife, but I am inclined to think that in these particular cases there is greater danger in delay, and in prolonging the patient's fears, than in an expeditious performance of the operation, which not only proves less trying than is generally anticipated, but which terminates in removing the source of distress, and the chief cause of the alarming symptoms.

* This case is also related by Mr. Travers, at p. 18.

* Lectures on the large Blood-vessels of the Extremities, p. 65.

† P. 17.

OBSERVATIONS

ON

THE OCCURRENCE OF CEREBRAL DISORDERS,

In connection with diseased Kidneys, in Children.

BY GOLDING BIRD, M.D. A.M.

Physician to the Finsbury Dispensary, &c.

[For the Medical Gazette.]

THE liability to the accession of symptoms indicative of cerebral lesion, when the functions of the kidneys are interfered with, has been so distinctly demonstrated by Dr. Bright, and is now so generally recognized by the profession, that it would be quite superfluous to occupy the pages of the MEDICAL GAZETTE with cases illustrative of this curious complication; more particularly as they are sufficiently frequent to fall under the notice of every practitioner whose field of experience is sufficiently extended.

The connection of cerebral with renal disease, however, becomes interesting in another point of view—from the possibility of detecting the existence of diseased kidneys, from the peculiar character of the cerebral symptoms manifested when œdema of the extremities or even coagulable urine may be absent; a fact lately pointed out by Dr. Addison*.

There is considerable reason to believe that the functional or structural lesion of the kidneys is a much more frequent exciting cause of many of the head affections so frequently presented by children than has been hitherto suspected; especially among those who come under our notice in public practice. Among the children of the poor, in large and crowded towns, scarlet fever often passes off completely unnoticed, save as a reputed cold or sore-throat, in consequence of the too frequent carelessness or neglect of parents, on the one hand, and the often evanescent character of the exanthema on the other; and hence nothing is more frequent than to have children brought to our hospitals and dispensaries in whom the pallid face, and the puffiness under the eyes, with perhaps slight œdema of the extremities, have led to a suspicion of

renal disease, and, on examining the urine, this suspicion has been justified by finding the secretion loaded with albumen; although on questioning the parents, the only assignable clue to a probable cause of these symptoms has been the prevalence of epidemic scarlet fever in the neighbourhood some weeks or months previously; the child at that time having been indisposed, but too slightly to demand confinement or medical attention: and not only is this tendency to the production of that degeneration of the kidney pointed out by Dr. Bright, indicated by the œdema and coagulable urine so frequently met with and recognized, but it is more than probable that careful observation will shew that many of the obscure heart affections of children, characterized by coma or convulsions, and coming on without any obvious cause, may in many instances be traced to lesion of the kidneys, produced in the first instance by the interference with the functions of the skin by neglected scarlet fever, or perhaps even measles. Hence such cases may be referred to the class pointed out by Dr. Addison in the Memoir before alluded to; and thus suspicion will be often awakened to the real nature of the ailment, by the peculiar character of the cerebral symptoms manifested. I have had this conviction forced upon me, by the extraordinary prevalence of reputed hydrocephalic cases, lately occurring in the persons of children who suffered in the severe epidemic scarlet fever of last autumn. On investigating some of these cases, the coagulability of the urine, often independent of œdema of the extremities, has at least rendered the existence of renal disease probable; whilst, in others, the peculiar quiet stupor, almost like that produced by a narcotic poison, with the pale face, slight puffiness under the eyes, and the absence of screaming, have afforded a great evidence of these cases being analogous to those pointed out by Dr. Addison. So many children affected in this manner, have, during this spring, been brought to the Dispensary, that several pages might be filled with the details of their cases, were such desirable. The question of interest appears to be not so much in the positive occurrence of cerebral symptoms connected with diseased kidneys, but as to *how far the peculiar character of*

* Guy's Hospital Reports, No. 8.

such cerebral disturbance is indicative of the existence of renal disease.

So far as my own experience has extended, I am convinced that cases do occur, and by no means unfrequently, in which the peculiar character of the cerebral symptoms developed, even in very young children, would direct attention to the kidneys as the exciting cause of the more prominent affection, where œdema, or even albuminous urine, may be absent. It is, of course, by no means necessary that scarlet fever, or any other exanthem, should have previously existed for the symptoms alluded to, to develop themselves; but, from the frequent existence of this disease, in an epidemic form, in crowded districts, it becomes, in the great majority of cases, the frequent, although often unsuspected, cause of such ailments. Anything that may so interfere with the secreting function of the kidney, so as to prevent the due elimination of azotised matter from the circulating mass, or may prevent its excretion when once separated from the blood, is fully competent to the development of a set of cerebral symptoms analogous to, or identical with, those described by Dr. Addison. The two following cases will serve to illustrate these positions; the first case being an example of head-affection, produced by, and indicating the existence of, positive disease of the kidneys; and the second, illustrating what rarely occurs in young children, viz. the cerebral symptoms produced by a mechanical interference to the excretion of urine.

CASE I.—I was requested by Mr. Bartlett, of Hatton Garden, to see with him a little boy who had been under his care since April 30th. He informed me that when first called to this patient, who was three years of age, he was labouring under excessive irritability of stomach, cough, and dry skin, coming on without any assignable or obvious cause; the urine was scanty, pulse quick and feeble, tongue brown, bowels confined, face pale, and presenting a remarkably torpid appearance. A mercurial purge and some diaphoretic medicines were administered, and on the following day the vomiting ceased. On May 3d this symptom returned, and on the 5th the child fell into a nearly comatose state. Mercurial diaphoretics, blisters to the neck, leeches to the temples, and assafœtida enemata were employed;

the coma, however, increased, and on May 14th I saw the little patient with Mr. Bartlett. He was lying in bed, with his legs stretched out; he was perfectly torpid, without stertor; but each inspiration was accompanied by a hissing sound, as if the air impinged directly upon the half closed lips. The face was pale, the eyes open, pupils moderately dilated, slowly contracting under the stimulus of light; the surface was cool, supple, and soft, although not moist. It appeared that the little patient had been lying in this state since May 9th, since which time it had scarcely taken any food, from the extreme difficulty in arousing him to a sufficiently conscious state to allow him to swallow. On calling loudly to him by name, I succeeded in awakening our patient to a momentary consciousness, during which he took a little beef-tea; but he almost instantly relapsed into his previously torpid state, the lips falling together, and the hissing noise returning at each expiration. There was no evidence of paralysis; and no tendency to convulsion had been manifested during his illness. A little urine was collected, and was found to be slightly coagulable by heat, although no œdema or puffiness under the eyes was present. Upon inquiry, I learnt that this child had suffered from the epidemic scarlatina of last autumn, and had always been more or less indisposed since.

The symptoms presented by this child, closely resembled those seen in the adult, when the function of the kidney had been interfered with, and belonging to the second class of the cases described by Dr. Addison, in Guy's Hospital Reports; and believing, moreover, that serous effusion was taking place into the ventricles of the brain, I had no hesitation in giving an unfavourable prognosis, an opinion verified by the death of the child within twenty-four hours from the time of my visit.

The body was opened 30 hours after death. In the head, a slight tendency to injection of the membrane was observed; the lateral ventricles contained each about an ounce of serum; the substance of the brain was remarkable for its snowy whiteness, and for the absence of blood-points. *Chest*: With the exception of slight emphysema of both lungs, everything was perfectly healthy. *Abdomen*: Both kidneys were turgid with blood; the right presented externally,

a slight although very distinct mottled appearance. The substances of each, on being cut into, appeared of a deep chocolate colour. The tunic could be stripped off with tolerable readiness. No other morbid appearance in any other of the abdominal viscera.

CASE II.—Alfred Buford, an infant eight days old, was brought to the Finsbury Dispensary in the beginning of last April. The nurse stated that it had appeared healthy and vigorous at birth, from which period it had gradually declined, lying in a torpid state all day long, and being aroused with extreme difficulty. On examining the little patient, I was struck with the remarkable appearance of quiet stupor it presented; its face was pale, eyes half-closed, pupils contracting feebly under the influence of light. On raising a limb, it slowly fell on removing the hand, into its previous position. The whole appearance was so like that of a child who had been over-dosed with some of the narcotic preparations which nurses too often administer to irritable children, that I questioned its mother on this point; it appeared, however, that no medicine of any kind, except a little castor oil, had been given to the child since its birth. On holding it to the breast, its lips feebly grasped the nipple, but almost immediately relaxed their hold, the infant relapsing into its previously torpid state. On inquiring concerning the urine, the mother and nurse remarked that they had never observed any signs of that excretion, and on examining the abdomen I found it distended, the scrotum œdematous and the size of an orange. The prepuce was also œdematous, and on attempting to find its orifice I at first failed, but eventually discovered a little opening not larger than a hair; this was dilated with a probe, and a very small catheter with some difficulty passed into the bladder; about half a pint of turbid and rather fetid urine escaped. A hot fomentation was ordered to the abdomen and scrotum, and some stimulants administered. The child revived a little after the urine was removed, and some warmth returned to the surface; it soon, however, relapsed into its previously comatose state, and expired in the evening. During the illness no sign of convulsion was manifested; the quiet stupor and pale surface were the only peculiar symptoms. The child had been, before I saw it, under the care

of a surgeon in the neighbourhood, who had administered some medicine, but appeared to have passed over unnoticed the fact of no urine having been voided since the birth.

A post-mortem examination of the body took place 24 hours after death. The bladder was found very much thicker than natural, its mucous coat injected, and numerous muscular bands appeared developed beneath it, so that this viscus resembled in miniature the state of bladder seen in stricture. The kidneys were turgid with blood, of a chocolate colour, and on squeezing the cones of tubuli an opaque milk-like viscid fluid exuded from the papillæ. No other sign of disease could be detected in any other part of the body.

These cases, I conceive, are of interest, from their pointing out the possibility of detecting, or at least suspecting, the existence of renal disease even in very young children, by the character of the cerebral symptoms presented by the patient: a fact, moreover, of importance, as it shews very satisfactorily that the phenomena described in Dr. Addison's paper are not limited to any particular age, and hence affords a powerful argument in favour of the correctness of the views developed in that essay. Subjects of this importance can alone be tested by experience, and not by the application of previous opinions or assumptions unwarranted even by statements of their authors. It is a dangerous thing to oppose preconceived notions to inductions from the careful observations of facts; and those who are rash enough to do so will generally have the mortification of being corrected by the youngest student who carefully watches the varied phenomena of disease.

22, Wilmington Square.

CASE OF EXTRACTION
OF
PENCIL FROM BLADDER BY THE
LATERAL OPERATION.

BY GEO. W. CAMPBELL, A.M. M.D.,
Lecturer on Surgery in the McGill Coll. Montreal.

[For the Medical Gazette.]

WILLIAM DAVIES, aged 21, of a healthy constitution, was admitted into the Montreal General Hospital in March last. He stated that about five weeks before his admission, while suffering from retention

of urine, he had introduced a short piece of a common black lead pencil into the penis, with the view of relieving himself. The pencil slipped from his grasp, and his attempts to extract it only pushed it further up the urethra. Finally, a surgeon was sent for, and by their *united exertions* the pencil was forced into the bladder. From that period up to the time of his admission into the hospital, he laboured under all the common symptoms of calculus vesicæ, with turbid and highly offensive urine, which he could not retain for a longer period than an hour. Upon introducing a sound, its point was felt to rub against some foreign body, and an operation was determined on. The preliminary steps having been taken, an incision was made into the bladder by the lateral method. Liston's knife and a grooved staff were the instruments used. Upon introducing the finger, the pencil was felt firmly wedged between the pelvis and the superior fundus of the bladder, and was extracted by means of a curved forceps: it measured upwards of three inches, and was incrustated for about half its length with a deposit of the uric acid calculus. A short gum elastic tube was left in the wound for 24 hours; the urine began to flow through the urethra 36 hours after the operation, and before the end of three weeks the wound had completely cicatrized.

Montreal, May 5th, 1840.

ON THE EFFECTS
OF
DIVIDING THE INNER STRAIGHT
MUSCLE OF THE EYE,
FOR STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

THE following particulars of the present condition of the eye, in a patient in whom the inner straight muscle was divided six weeks ago, for strabismus, may be interesting to some of your readers.

Caroline Hebditch, aged 16, living at 9, Upper Dorset Street, Bryanston Square, began to squint with the right eye about the age of eight, upon being put to the employment of picking hair. The right eye became turned in to the utmost degree of ordinary strabismus.

But, as is usual in such cases, when the good eye was closed, the distorted one would recover its proper direction. The sight of the right eye, when thus brought into use, was, however, less perfect than that of the left, and its use in this manner would be followed by pain and aching of the eye-ball.

The operation consisted in dividing the tendon of the inner straight muscle upon the groove of a curette, introduced between it and the sclerotic, after a vertical section of the conjunctiva, near the semilunar fold of the caruncula lacrymalis.

The results of the operation, now that six weeks have elapsed, are the following:—

1. The right eye, upon a superficial examination, might appear to have completely regained its just direction; but it has, in truth, only approximated to it. The patient, as you stand before her, seems to look at you with both eyes; but upon her closing the left eye with her hand, you observe the right to be sensibly turned further outwards, in order to look at you. When she now opens the left eye, the right is seen again to move inwards, reverting to its former direction. Nevertheless, when both eyes are open, and she looks straight forwards, her vision is single. It is, therefore, to be presumed, that when looking straight forwards with both eyes, she disregards impressions made upon the right eye.

2. The right eye is capable of being turned further inwards, and apparently to the same extent as natural. This must be attributed to the agency of the inner fibres of the upper and lower straight muscles.

3. The right and left eye appear to move together with perfect consent. When vision is directed to a near object, the optic axes converge more; when to a remote object they converge less. When an object is moved laterally before her, the same distance being preserved from the eyes, the optic axes, as they follow it, seem to maintain the same inclination towards each other. The same consent, it may be remarked, really obtains between the eyes of persons who squint. So the best account of the effects of the present operation, as yet described, is, that through it the patient squints *less* than before.

4. But, in addition, she can turn her right eye freely outwards, and

uses it habitually to see objects that lie to her right; her range of vision is therefore materially increased. Her right eye, likewise, appears to have gained strength; vision with it she finds now to be as perfect as that of the left, upon trying both alternately.

It is evident that she is so far a material gainer by the operation. But there is the following drawback, which, however, is not constant, and may possibly diminish with time—her right eye appears to be slightly larger than the left. This arises from the action of the two oblique muscles, in drawing the eye forwards, not being now sufficiently antagonised; the right eye looks larger than the left, from being rendered, through this cause, the more prominent of the two.—I am, sir,

Your obedient servant,

HERBERT MAYO.

19, George Street, Hanover Square,
June 2, 1840.

ON THE SITUATION
OF THE
DECIDUOUS MEMBRANE,
IN
Cases of Extra-Uterine Gestation.

BY ROBERT LEE, M.D. F.R.S.

[For the Medical Gazette.]

A LADY died suddenly, in 1829, from internal hæmorrhage, produced by rupture of the right fallopian tube, which contained an ovum. On opening the tube, and examining the different parts of the ovum, I found a deciduous membrane every where surrounding the chorion, and closely adhering to the inner surface of the tube, as the decidua usually does to the lining membrane of the uterus in ordinary gestation. Within the decidua the chorion, placenta, amnion, and embryo, were distinctly seen. The uterus was larger than natural, and there was no appearance of decidua lining its internal membrane. The decidua, and other parts of the ovum in the right fallopian tube, are all distinctly seen in the preparation of the uterus and its appendages, which is now in the museum of St. George's Hospital.

On the 18th July, 1836, Mrs. K—, after suffering for some time with symptoms of inflammation and retroversion of the uterus, was seized with great faintness, and soon expired. A large quantity of fluid blood was found in the ab-

dominal cavity, and the right fallopian tube, which contained an ovum of ten or twelve weeks, was extensively lacerated near the fimbriated extremity. On removing the uterus and its appendages from the body, and carefully examining the ovum contained in the right fallopian tube, it was evident that a deciduous membrane every where surrounded the chorion, and adhered to the inner surface of the tube. The placenta, which was situated at the extremity of the ovum nearest the uterus, was seen covered with the decidua, and coagula of the fibrin of the blood were traced from the interstices of the placenta through the decidua into veins in the thickened muscular coat of the tube. At the part where the placenta was situated, the muscular coat of the tube was a quarter of an inch in thickness, and could readily be separated into layers like the muscular coat of the gravid uterus. In this coat of the tube, the veins were also readily traced from the inner surface outward, opening obliquely into one another, and enlarging as they reached a great vein near the uterus.

The interstices of the villousities of the chorion, filled partially with clots of fibrin, were seen around the whole ovum, and presented nothing different in their appearance from those of ova which have been developed within the uterus.

Between the chorion and amnion, near the placenta, was seen the vesicula umbilicalis, with its slender peduncle, proceeding to the umbilical cord.

The appearance of the amnion, cord, and embryo, was perfectly natural.

The uterus was considerably enlarged, and its inner surface was coated with a very thick layer of a yellowish-white soft substance, like common adipose matter, and bearing no resemblance to deciduous membrane. There was no trace of any arterial or venous canal in this coating. The orifice and neck of the uterus were closed with the usual viscid substance, formed by the Nabothian glands.

There was a corpus luteum in each ovary. Both layers of the Graafian vesicle were inclosed within the yellow matter, and this was in immediate contact with the stroma of the ovary*. In

* On the 25th February last I examined, with Mr. Wharton Jones, a corpus luteum which was removed from the body of a woman who died in the fourth month of her pregnancy. The yellow matter was here likewise in immediate contact

the preparation of the parts, the decidua, placenta, chorion, vesicula umbilicalis, amnion, umbilical cord, and embryo, are all distinctly seen, and likewise the layer of the muscular coat of the fallopian tube, with the veins proceeding from its internal to its external surface. The vesicula umbilicalis has become greatly diminished in size since the parts were immersed in spirit. With the exception of the coagula of blood in the interstices of the placenta, and villi of the chorion, the constituent parts of this ovum are the same as in all cases of intra-uterine gestation, and are in a healthy condition. The preparation of the parts is likewise in the museum of St. George's Hospital.

In the history of a case of fallopian tube gestation which occurred to M. Chaussier, in 1814, it is stated that the walls of the tube were thin and vascular, that the placenta attached to the inner surface was broad and thin, and that, when detached, the membrana decidua surrounded the ovum. I have met with no case, except this, in which the deciduous membrane is distinctly described as surrounding the ovum in the fallopian tube; yet I am certain that this must be the fact in all cases of extra-uterine gestation, the circulation of the maternal blood in the ovum being carried on chiefly by the blood-vessels of the deciduous membrane.

Dr. William Hunter examined a case of fallopian tube gestation, in which the uterus was enlarged, and the membrana decidua was distinctly seen lining the fundus uteri. From this appearance he inferred that the decidua, or outer stratum of the secundines, belongs to the uterus, and not to the ovary, or that part of the conception which is brought from the ovarium.

In all the cases of fallopian tube conception which have since been recorded, except those of Mr. Langstaff and M. Velpeau, a deciduous membrane has

been described as present, lining the cavity of the uterus; and most authors have believed it to be formed in all cases of this description.

"Though the fœtus be extra-uterine," observes Dr. Denman, "the uterus becomes considerably enlarged, and performs its proper office by providing the effluence or deciduous membrane for the reception of the ovum."

"Although it be extremely probable," observes Dr. Baillie, "that the decidua begins to be formed at the time that the ovum passes into the cavity of the uterus, yet it is not absolutely necessary for the formation of the decidua that the ovum should reach that cavity. When an ovum grows in the ovarium or fallopian tube, the decidua is both formed in the uterus, and the uterus is considerably enlarged, so as to undergo, to a certain degree, changes exactly similar to those which take place in a natural pregnancy*."

Dr. Burns says, "It is curious to observe that invariably the uterus enlarges considerably, and, in every instance, decidua is formed," p. 220.

Meckel, Breschet, Velpeau, and every other author, with whose writings I am acquainted, have given the same opinion on this subject; and not only has this been considered an undoubted fact in all cases of extra-uterine gestation, but, in common pregnancy, it has been supposed that a deciduous membrane is invariably formed within the uterus before the ovum enters its cavity. That the decidua is not formed within the uterus in all cases of extra-uterine gestation, the preparations now described clearly demonstrate. That the uterus is usually enlarged, and its lining membrane coated with a viscid substance resembling the decidua, is certain; but this has not been shewn in any instance to possess an organized vascular structure similar to that of the true decidua. If the fact were established, that the cavity of the uterus always contains a deciduous membrane in cases of extra-uterine gestation, it would not follow that, in ordinary conception, the cavity is lined with a decidua in the form of a shutsac before the descent of the ovum.

with the stroma of the ovary, and had no capsule around it. Within the yellow matter, and loosely adhering to it, was seen a small whitish cyst, the outer surface of which adhered loosely to the yellow matter. When this cyst was cut open under water, there was seen a very small cavity in the centre. There were two perfectly distinct coats which formed the walls of this little cyst; and these two layers were separated by a less dense structure, apparently cellular membrane, of a bluish or whitish milky appearance. This observation establishes beyond all doubt the correctness of my views respecting the structure of the corpus luteum.

* Anatomical Description of the Gravid Uterus, by W. Hunter, M.D.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

Odontography, or a Treatise on the Comparative Anatomy of the Teeth; their physiological relations, mode of development, and microscopic structure in the vertebrate Animals. Illustrated by upwards of 150 Plates. By RICHARD OWEN, F.R.S. &c. Part I., containing seven sheets of letter-press, and fifty plates, from drawings by Mr. T. Dinkel, and engraved by Mr. L. Aldous. Baillière, 1840.

MR. OWEN'S talents for observation, and his great practice in description, appear to be demonstrated with much effect in the work before us; which, however, as it contains a detailed account of preparations only accessible to the conservators of the Hunterian Museum, and may thus be regarded as forming a part of its descriptive catalogue, is an exception to the ordinary run of books which it is our lot to criticise. This observation, at any rate, holds good of those portions of it which are devoted to comparative anatomy and natural history; for as we have not the especial preparations before us to which they relate, we cannot test their accuracy, and can only arrive at the general conclusion, that they appear to be faithful accounts of the objects which they profess to describe.

This first part of Mr. Owen's present work is devoted to the teeth of fishes, recent and fossil, from the Cyclostomes to the Labroids; and for the description of these we must refer the reader, for the reasons above mentioned, to the work itself: but with respect to the general doctrines of dental development and structure, which we find promulgated in various parts of it, we have several observations to make.

Mr. Owen evidently considers his theories on this subject of considerable value; for he has not only referred to them frequently in the work before us, but we also find that he has been at the trouble of sending them abroad, and submitting them to one of the highest scientific bodies in the world: for, on turning to the Number for December 16th of the *Comptes Rendus* of the Academy of Sciences at Paris, we there find

a French edition of them, with various modifications and additions.

Let us first state, then, what these views are which the author has been so careful in laying before the scientific world both in France and England, as his own original theories. “The uniform result of my researches,” says he (p. 13), “on the structure of the teeth in all grades of vertebrate animals, and in their natural and diseased states, has been a conviction of the untruthfulness of the terms inert and inorganized as applied to the substance of any tooth whatever.”

At p. 37, we have the following passage:—“The formation of the body of the tooth by deposition of earthy particles in pre-existing and pre-arranged cavities is still more satisfactorily demonstrable,” &c. In the extract from his *Mémoire* in the *Comptes Rendus*, which is principally composed of a translation of p. 35, 36, and 37, of the part before us, we find him stating that “Les auteurs les plus récents qui ont écrit sur la nature et le développement des dents, et qui ont résumé en des propositions générales leurs observations relativement à ces organes dans les poissons, les reptiles et les mammifères, les ont décrits comme des corps de nature inorganique, dont l'accroissement s'opère à la manière des corps bruts, par la juxtaposition successive de couches exsudées par un bulbe ou membrane glandulaire.” We thus find him publishing in England the results of his researches, and stating in France that the other recent writers on the subject have arrived at different conclusions.

On first perusing these passages, we were struck with their inconsistency with statements we had lately read, and on inquiring into the subject we soon found that Mr. Owen's discovery of the organic nature of the ivory was far from being original, and that even the pages of our own journal furnished sufficient proof that “les auteurs les plus récents” had not all regarded the ivory as an “inorganic exudation” of a “membrane glandulaire.” In a paper on the structure of the teeth, read by Mr. Nasmyth, at the last meeting of the British Association held at Birmingham, as reported in the *Literary Gazette* for Sept. 21st, 1839, we find that gentleman describing the cells of the ivory as formed by an ossific transformation of the cells of the pulp. In the report of this paper published in

our own columns, a diagram is given of the cells of the pulp, showing them in their state of transition into ivory*.

In Mr. N.'s own report, given in the Transactions of the Association, which has been printed separately, and a copy of which is now before us, we find it expressly stated "that the ivory is neither more nor less than the ossified pulp, and that it can in no wise be regarded as an unorganized body."

Our curiosity having been excited by these singular inaccuracies on the part of Mr. Owen, we were induced to examine his statements more particularly in reference to Mr. Nasmyth's previous publications; and the result is, that we have found that he has been anticipated by Mr. N. in all his main positions respecting the formation and structure of the teeth.

For the proofs of this, as a general assertion, we must content ourselves with referring to the papers of Mr. Nasmyth, and the Memoir of Mr. Owen. But, with respect to the grand question of the organization of the ivory, on which it is worth while to dwell a little longer, we shall shew, by the simple method of juxta-position, the inaccuracy of Mr. Owen's introductory statement to the French Institute.

From *Comptes Rendus*, for Dec. 16th, 1839, p. 784.—"Les auteurs les plus récents qui ont écrit sur la nature et le développement des dents, les ont décrits comme des corps de nature inorganique, &c."

From *Lit. Gazette*, for Sept. 21st, 1839, p. 601.—"The interfibrous substance of the teeth," said Mr. N., "had been improperly described by modern anatomists as presenting no traces of peculiar organization; but his researches had led him to the conviction that it is not only organized, but differently and characteristically so in different animals, so as to be capable of affording valuable aid to the naturalist in the classification of the animal kingdom. This organization he proceeded to describe as cellular, and he exhibited various diagrams of its appearance."

Thus it is clearly impossible that Mr. N. can be considered as regarding the ivory as inorganic.

Throughout this first part of Mr. Owen's work, reference is continually

made to the existence of a capsular investment of the enamel, and of the transformation into coarse bone of the interior residual portion of the pulp, after the ivory has been fully formed, as if these were generally acknowledged and well-known facts, though the truth is, that they are both recent discoveries of Mr. Nasmyth, who has devoted a paper in the *Med. Chir. Transactions* to their announcement and description.

Our limited space renders it impossible for us to quote all the instances of resemblance between Mr. Owen's views and those previously published by Mr. Nasmyth. We must refer the reader who is curious in such scientific analogies to a comparison of the Reports of Mr. N.'s papers read at the British Association, in August last, contained in the 620th No. of the *Athenæum*, and the 1183d No. of the *Lit. Gazette*, with Mr. Owen's Memoir contained in the No. of the *Comptes Rendus* for Dec. 16th, 1839. Such a comparison cannot but lead to the conclusion that Mr. Nasmyth, in his researches on this part of the subject, has anticipated all that Mr. Owen claims as original.

It will also be seen that Mr. Owen's views of the structure of the teeth in the higher animals are only deduced from analogy, whilst Mr. Nasmyth's are the result of direct investigations.

Mr. Owen cannot, of course, be aware that he has been anticipated in these points of dental anatomy by Mr. Nasmyth: at all events, we cannot suppose for an instant, that, had he been acquainted with this fact, he would have omitted to allude to it in some part of his work, or of his communication to the French Institute; particularly when we recollect that he was one of the Council of the British Association, at Birmingham, and might, in this capacity, be considered as more especially called upon to see justice done to any scientific claims or statements made at that meeting. Be this as it may, however, it is our duty, as journalists, to signalize errors and omissions of this kind, and to point them out to their authors for correction. Now that he is made aware that the opening passage of his *Mémoire*, laid before the French Institute, contains an important inaccuracy, he will doubtless think it due to that illustrious body, as well as to the gentleman immediately concerned, to rectify it; and

to acknowledge, at the same time, that most of the ideas he has promulgated in his *Mémoire*, and in the work before us, on the development and structure of the teeth, had been previously published by another author.

We now proceed to make a few general observations which have suggested themselves to us in perusing Mr. Owen's work. First, with respect to the theory of the tubular structure of the dental bone. We are surprised that Mr. Owen should have adopted this theory without any comment or examination of its merits, and without any attempt at explanation of the contradictions in which those who have hitherto supported that doctrine have been uniformly involved.

He also adheres to the theory of the papillary, follicular, and eruptive stages of dentition, as propounded by Arnold and Goodsir; but here, likewise, he furnishes no new evidence in support of a novel and disputed doctrine. He frequently speaks of the ossified capsule, although its existence is incompatible with the doctrine of an eruptive stage, for it is a contradiction to treat of the capsule as remaining to be ossified, after it has been described as having been ruptured by the extrusion of the tooth. On this subject we find, at p. 16, the following singular observation. "In the Balistes, Sparoids, Sphyræna scarus, and many other fishes, the foundation of the teeth presents all the usual stages which have been observed to succeed each other in the dentition of the highest organized animals: the papilla sinks into a follicle, becomes surrounded with a capsule, and is then included in a closed alveolus of the growing jaw, where the development of the tooth takes place, and is followed by the usual eruptive stages." It would be very interesting to us to have the means of verifying this remark.

In respect to the general plan of Mr. Owen's work, it is but doing justice to M. de Blainville to state that it differs in no essential respect from the odontographic department of his '*Osteographie*,' the first part of which was published last year. The application of the micrography of the teeth to the recognition of the type of animal, contained in Mr. Owen's work, had been previously made by Retzius, Nasmith, and others.

MEDICAL GAZETTE.

Friday, June 5, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in Ibpucum sit, dicendi periculum non recuso." CICERO.

FOUNDLING HOSPITALS AND THEIR EFFECTS.

THERE are few circumstances connected with the distribution of public benevolence, in which the system adopted in this country differs more widely from that of the Continent, than in the provision which is made for the offspring of illegitimate intercourse, or of married parents who are unable to provide a maintenance for their progeny. It would seem (and to foreigners it does generally appear) as if the notorious charity of England were neutralized in this direction by some ill feeling; and it is not easy to render it clear to one accustomed to the extended and almost unrestrained system of providing for the *enfants trouvés* abroad, what are in this country deemed sufficient reasons for the very limited assistance that is afforded to that class from any other source than the poor's-rate, from which it is dealt out with so close and reluctant a hand.

The report of the charity Commissioners on the Foundling Hospital in London (the only institution of the kind, we believe, in the kingdom), affords several facts of considerable interest in evidence of the sufficiency of the grounds upon which only a limited degree of assistance is afforded to charities of this class.

The Foundling Hospital, possessing at present an income of about £15,000 a-year, and in which by the falling-in of leases a very large increase may soon be anticipated, was founded in 1739, by a charter granted on the petition of Thomas Coram, the master of a trading vessel, who had for some years

previously exerted himself strenuously to attain this object. Before presenting his petition, it appears that he obtained three memorials or recommendations of his design, the first signed by 21 "ladies of quality and distinction;" the second by noblemen and gentlemen; and the third by justices and other persons of distinction. One of these memorials recites that no expedient had been found out for preventing the frequent murders of poor infants at their birth, or for suppressing the custom of exposing them to perish in the streets, or putting them out to nurses, who, undertaking to bring them up for small sums, suffered them to starve, or if they permitted them to live, either turned them out to beg or steal, or hired them out to persons by whom they were trained up in that way of living, and sometimes blinded or maimed to move pity, and thereby become fitter instruments of gain to their employers. The petition itself also speaks of frequent murders being committed by the cruel parents to hide their shame.

On these grounds the Hospital was founded and liberally endowed. Happy would it be if, in these days, though its income has increased in full proportion with the population, it were found in any perceptible degree to mitigate the evils that it was hoped to remedy. But even if it did not tend rather to encourage the evil it might propose to mitigate, it would in the present day be but as a drop in the ocean; and few things, perhaps, can illustrate better the total inefficiency, (not to say the utter mischievousness) of recent legislation for the poor, than that all the pleas for the original establishment of this institution might now be urged with much greater force. The frequency of infanticide is undoubtedly greater now than then, and this not so much for the purpose of hiding shame, as to relieve the mother from a burden which she cannot hope to

support, or to have care taken of; the hiring of children for begging and stealing, the apprenticing them to fraudulent and cruel masters, and the starving by workhouse nurses, that *Coram* might now find, would be sufficient to make even him despair, as much of ameliorating the condition of the children themselves, as of reforming the evil system from which their miseries result.

If the need of assistance, therefore, for destitute children be a sufficient ground for establishing institutions of this kind, no time can ever have demanded more loudly for an increase of their number. On a fair calculation, three more hospitals in the metropolis, of the same extent as the present, would not be more than sufficient for the reception of those children who might be deemed proper objects.

But there are some startling facts in the report, which seem to prove beyond a doubt that the most effectual means of augmenting the number of foundlings, is a liberal supply of means for their maintenance in numerous or extensive foundling-hospitals. This, it is well known, is the common argument against such establishments; and it is usually illustrated by the fact of the far greater number of foundlings and illegitimate children in Paris than in London. This example, however, is not unexceptionable; for it remains yet to be shown, how far the numbers in the former city would be reduced if the indiscriminate reception of children in the charities were to cease, or if certain bounds were put to it. The history of our own Foundling-hospital affords much clearer evidence. The hospital was opened on the 25th of March, 1741, notice having been previously given to the public that children would be admitted till the house (then situated in Hatton Garden) was full. The children were merely brought to the door, and if, on examination, they were found free from

any communicable disease, they were admitted, without any questions whatever being asked respecting them. Under this plan, the numbers asking for admission appear gradually to have increased; and, in 1742-3, it was proposed to enlarge the hospital, and obtain funds enough to admit all the children that were brought. At this time it often happened that there were 100 women with children at the door, when only 20 could be admitted; and riots and disturbances often took place. A practice was then introduced of receiving by ballot; and all the women were admitted into the court-room, and drew balls out of a bag.

The plan of indiscriminate admission, however, was not commenced till 1756, when the House of Commons first lent its aid for this purpose to the hospital. It was continued for nearly four years; and the cost which it entailed on the hospital, and which, with some others less important, was defrayed by the House of Commons, amounted to little short of £550,000.

A basket was hung at the gate of the hospital, in which the children were deposited, after ringing a bell to give notice to the officers in attendance. On the 2d of June, 1756, the first day of general reception, 117 children were received; and, between that day and the end of that year, 1783 children, and in the following year, 3727 were admitted. The governors directed, in June, 1757, that advertisements should be issued, apprising the public of the privilege to which they had become entitled; and notices to the same effect were put up at the corners of public streets, and places of public resort.

The consequences of this general admission (says the report) were, indeed, lamentable. Prostitution was greatly encouraged by the unlimited facilities afforded for disposing of the fruits of illicit intercourse. The governors hav-

ing neglected to provide themselves previously with proper means of rearing so many children during the most critical period of human life, by far the greater number of the infants admitted died. Of 14,934 children received during the three years and ten months that this system was continued, no less than 10,389 perished in early infancy. Parish officers, in some cases by fraud, in others by force, sent in the legitimate children of pauper parishioners, to relieve their parishes from the cost of maintaining them. Parents also brought their children when in a dying state, for the purpose of having them buried at the expense of the hospital; strangers were employed by parents to convey their children from the country to the hospital in London at so much per head, and many of them, through the wilful brutality or criminal negligence of those to whom they were consigned, never reached their destination alive.

This system was discontinued in 1760, but its short continuance was amply sufficient to shew, in the above brief history, all its evils, and all those of the same plan, however modified in its details, in other countries. With increased facility, there immediately coincides increased licentiousness, and the strange anomaly is exhibited of charity engendering crime. The harm of such a system is incalculable; for as it effectually removes one of the principal restraints on the production of bastard children—the fear of the burden of maintaining them—it creates a demand for assistance which none but the most enormous funds can possibly meet. With the numbers above mentioned, for example, and at the rate of 6*l.* per head annually for thirteen years (which is about a fair calculation for the necessary expenses for the average), an income of 150,000*l.* a year would have been barely sufficient for the maintenance of the hospital. Nor does the evil stop here:

but it almost of necessity follows that the reception of such numbers of children is accompanied by a constant and great mortality among them. The numbers given above afford a frightful example of the effects of negligence, in part criminal, but, no doubt, in still greater part unavoidable; and the same is deducible from a comparison of the high rate of mortality in the children's hospitals in Paris with the very low rate among the children at present received into the Foundling. Between 1810 and 1831, 754 children were admitted,^e and of these 197 died, being at the rate of 26 per cent.; but of these 197, no less than 130 died under two years of age.

Under the present system adopted at the Foundling, according to which no children are admitted without a previous and satisfactory inquiry into the circumstances of their birth, and the condition of their parents, about thirty-two children are received in the course of the year. It is now, therefore, scarcely an object of medical interest, unless to remark how marvellously well, under good care, and when removed from the mischief that mothers, in their foolish fondness, inflict upon them, children will thrive. Except from epidemics, illness may fairly be said to be a rare occurrence in the hospital; and probably so healthy a body of children could not be found in the kingdom, even were their numbers much greater; therefore, there could not be any opportunity afforded of studying here the peculiarities of their diseases.

With this limited number of admissions, the benefit and injury which such an institution effects scarcely admit of being estimated; but there can be little doubt that the former does, on the whole, preponderate. How far its scope could be enlarged without mischief, is uncertain; but any great increase would unquestionably be dangerous. Indeed, with the exception of the opportunities which they afford for the study of the

diseases of children, we are not certain that, with one exception, any thing but evil results from the existence of large foundling-hospitals. They undoubtedly diminish the frequency of infanticide by removing the chief inducements to it, viz., the fear of shame and the difficulty of maintaining children; but to counter-balance this they fearfully increase licentiousness and bastardy, destroy some of the chief though harsh safeguards of female virtue, and tend to engender a disgusting looseness of manners and morality. The difficulty is, and probably long will be, to find that happy medium in which, while every present restraint upon the multiplication of illegitimate offspring is continued, there shall still be full security for those that are born from starvation, from the brutality of unsympathizing nurses and masters, and, above all, from destruction by their parents. This, however, is another and not the least interesting of the questions involved in that which is in this, as in nearly every other portion of it, the greatest blot and bane of our land—the Poor Law.

SMALL-POX AND VACCINATION.

THERE are two Bills before the House of Commons, both having for their object the extension of vaccination, and prevention of small-pox. One of these was brought in by Lord Ellenborough, and has been sent down from the House of Peers; an account of it will be found in our last volume, at p. 940. The other bill has been introduced by Mr. Wakley in the Lower House. The latter appears to us decidedly the better of the two; and we subjoin a copy that our readers may judge for themselves. But the Member for Finsbury has so little influence, that there appears great risk of Lord Ellenborough's plan being preferred, unless the profession exert themselves by immediately petitioning in favour of the bill "To prevent inoculation for the small-pox, and to extend the practice of vaccination." Such petitions must be presented on or before the 17th of this month.

A BILL

TO PREVENT INOCULATION FOR THE SMALL POX, AND TO EXTEND THE PRACTICE OF VACCINATION.

Preamble.

Whereas it is expedient, and would tend greatly to promote the security and health of the public, to prevent the propagation of the Small-pox by inoculation, and to extend the practice of Vaccination; Be it therefore enacted, by the Queen's most excellent Majesty, by and with the advice and consent of the Lords spiritual and temporal, and Commons, in this present Parliament assembled, and by the authority of the same,

Prohibit of Inoculation with Variolous Matter.

I. That whosoever shall, from and after the *passing of this Act*, produce or attempt to produce in any person by inoculation with variolous matter, or by wilful exposure to variolous matter, or to any matter, article, or thing, impregnated with variolous matter, or wilfully by any other means whatsoever, produce the disease of Small-pox in any person, in any part of England or Ireland, shall be guilty of a misdemeanour, and shall be liable to be proceeded against, and convicted summarily in England before a justice of the peace, and in Ireland (if the offence be committed in Ireland) before the justices of the peace in petty sessions assembled, and for every such offence shall, upon conviction, be imprisoned in the common gaol or house of correction, with or without hard labour as to such justice or justices shall seem meet, for any term not exceeding *three months*, nor less than *seven days*.

Relieving Officers and Overseers to give Orders for Vaccination.

II. And be it enacted, That from and after the *passing of this Act*, every relieving officer or clerk of any Board of Guardians of any Union in England or Ireland, and every overseer of any parish in England wherein relief to the poor is not administered by guardians, is hereby directed, whenever it shall appear to him that the person on whose account any such order as is hereinafter described is demanded, has not been vaccinated, to deliver to any individual applying for the same an order, framed according to the form contained in the schedule marked (A), hereunto annexed, for the vaccination of any person as aforesaid, being then resident in the Union or parish respectively, wherein any such application is made.

Remuneration to Medical Men Vaccinating by order of Relieving Officers or Overseers.

III. And be it enacted, That any legally-

qualified medical practitioner who may by the authority of any such order successfully vaccinate any person as aforesaid, shall, on presenting the said order, within *three calendar months* from the date thereof, to the guardians of the Union or the overseers of the parish wherein the said order was issued, be paid by the said guardians or overseers the sum stated in the schedule marked (B) hereunto annexed: Provided always, That if the said order be not presented within the period of *three calendar months* as aforesaid, the payment of any part of the sum mentioned therein shall not be allowed.

Remuneration to Medical Men to be paid out of Poor's Rate.

IV. And be it enacted, That the guardians of every Union and the overseers of every parish, as aforesaid, are hereby empowered and directed to pay the sum mentioned in any such order aforesaid, not exceeding the amount stated in the schedule hereunto annexed, out of the monies which are in their possession from time to time, collected as rates for the relief of the poor: Provided always, That no such payment shall be made to any vaccinator who is not a legally qualified medical practitioner, nor to any person holding the office of vaccinator by virtue of an appointment from the National Vaccine Board.

Return of Number of Persons Vaccinated to be annually made to National Vaccine Board.

V. And be it enacted, That the guardians of any union or overseers of any parish, as aforesaid, shall, in the month of January in every year, cause to be prepared from the orders returned to them by vaccinators, a summary of the numbers of persons vaccinated, and of the ages of such persons, and of the instances in which the operation was successful; and shall forward the said summary, on or before the *first day of March* then next ensuing, to the office of the National Vaccine Board in London, or to such other place, from time to time, as one of Her Majesty's Principal Secretaries of State may direct or appoint.

Penalty on Persons fraudulently obtaining or signing Order for Vaccination.

VI. And be it enacted, That every person who shall fraudulently apply for, obtain, deliver, or sign any such order for vaccination as is hereinbefore mentioned, or shall wilfully introduce into such order any false statement, shall be guilty of a misdemeanour, and, being convicted thereof, shall be punished accordingly.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

May 26, 1840.

THE PRESIDENT IN THE CHAIR.

—

A Case of Aneurism of the Arteria Innominata, in which the Carotid and Subclavian Arteries were tied. By W. WICKHAM, Surgeon to the Westminster Hospital.

THE patient was a tall spare man, of sallow complexion, 55 years of age, and had followed the occupation of a sailor. He was admitted into the hospital, in September 1839, with a swelling over the right clavicle, about the size of a hen's egg, and having all the characters of aneurism of the arteria innominata. This tumor extended over the carotid artery at its lower part, reaching as high as the omohyoideus muscle, and also reaching outwards over the subclavian artery. As it appeared impossible to place a ligature on the affected artery with success, the author, in consultation with his colleagues and Sir A. Cooper, determined on tying the carotid and subclavian arteries.

In pursuance of this resolution, the carotid was tied on the 25th of September, 1839, without any unusual circumstances. Immediately on the ligature being tightened the sac was evidently reduced in size, and the force of the pulsation in the tumor was diminished. The cough and dyspnœa also were immediately and greatly relieved. At the end of three weeks the patient quitted the hospital, contrary to advice, and promised to return in a week or ten days. The tumor at this time was of the diminished size to which it had been reduced at the time of the operation. Unfortunately, however, the man did not return until compelled to do so by dyspnœa, the consequence of the rapid increase of the tumor to more than double its original size. On the 23d December, it was determined to tie the subclavian artery, notwithstanding that the patient appeared to be almost at his last gasp from suffocation, and that great fears were entertained lest he should expire under the operation. As soon as the artery was tied, the dyspnœa was so much relieved, that the man walked to his bed with ease, and from that time until he died he continued free from any inconvenient pressure on the trachea. Four days after the operation he was suddenly seized with delirium, which, however, was soon relieved. From this time the tumor slowly increased; but he recovered his strength sufficiently to wish to leave the hospital.

On the 5th of February, the ligature having come away previously, he left the

hospital, and lived till the 16th of that month, when he died from hæmorrhage, the consequence of the bursting of the sac. Dissection showed the disease to have been seated, as was supposed, in the arteria innominata.

A preparation of the diseased parts was shown to the Society.

The Secretary of the Society requests us to state that a case was read on the 12th May, by Mr. Blizard Curling, Assistant-Surgeon to the London Hospital, of a rare species of hydatid (the *Echinococcus hominis*), having been found in the human liver.

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PATHOLOGICAL DEPARTMENT.

June 2, 1840.

MR. ARNOTT IN THE CHAIR.

Polypus of the Heart.

Dr. Boyd placed before the Society a preparation of a heart, to the walls of the left auricle of which there adhered, by a firm pedicle, a true polypus growth. This substance was about the size of a small chestnut, of a globular form, smooth on its surface, and covered by a thin membrane continuous with the endocardium. It hung somewhat loosely in the cavity of the auricle, attached by its pedicle, which was short, and about the thickness of one of the fingers. The heart had been injected with size and vermilion by the coronary arteries. Upon a section of the tumor being made, it was found to consist of a substance which resembled the fibrin of the blood much condensed; presenting only in one part, towards its surface, the appearance of the colouring matter of the blood. When it was examined carefully, two or three small vessels, containing injection, were seen entering into its substance; and when portions taken from near its neck were placed under the microscope, numerous delicate vessels were distinctly apparent. In the centre of the tumor there was some extravasation of the injection. The heart was generally hypertrophied, and weighed 13 ounces, being about one-third above the average weight.

The patient, from whom the specimen was taken, was a man 73 years of age. When brought into the Marylebone Infirmary his vital powers were extremely low: he had hemiplegia, and his pulse could scarcely be felt; hence no particulars of the history of his illness that were satisfactory could be obtained. He died of diarrhœa fourteen days after his admission. Upon examining the brain, a firm clot of blood was found in the left hemisphere.

Dr. Boyd was unwilling to hazard an opinion as to the origin of the morbid structure in the preparation. In favour of the supposition, that it had proceeded in

the first place from a deposition of the fibrin of the blood upon the surface of the auricle, and which had subsequently become organised and adherent, he showed to the Society a preparation, belonging to Mr. Kiernan, of the left iliac vein. This vein contained a clot of fibrin, and, into the interior of the fibrin fine blood-vessels could be traced from the surface of the vein. Mr. Kiernan obtained his preparation from the body of a female, who had died with a large tumor situated in the abdomen, and in which he had carefully injected the arteries of the part. He referred likewise to a tumor in the heart, very similar to the specimen which he exhibited, that had been shown to him by Dr. Hodgkin.

Dr. Clendinning was disposed to consider, that as the tumor in question had the name polypus applied to it, so its growth resembled that of polypi in other organs of the body; for example, the nose. He confessed that he spoke with diffidence on the subject; but he thought it easier to account for the pendulous appearance of the tumor, and the continuity of the membrane which covered it, with that of the interior of the heart, by supposing that the morbid growth commenced beneath the endocardium, and was gradually developed under that membrane, than by any other explanation.

Mr. Arnott remembered to have been present at the examination of a body, some years ago, when a tumor, similar in appearance, and also in regard to its situation, to that shown to the Society by Dr. Boyd, was discovered. It was of a globular form, of firm consistence, and was attached by a neck, having such a degree of strength, that the whole heart could be raised from the table by lifting it by the tumor. In reference to the preparation on the table, of the iliac vein, in which it was supposed that the clot of fibrin contained within it was injected, he could not avoid believing that the appearances were deceptive. These minute vessels were seen on the surface, and the coats of the vein were also observed to be thickened. Now, it was his opinion that the vein had been originally inflamed; that the result of this inflammation was the deposition of lymph on the surface of the inner coat of the vein; that this lymph on the inner coat had become eventually organized; and that the vessels which had been injected were those ramifying in the newly-deposited membrane, and did not enter into the interior of the clot.

Dr. Williams coincided with Dr. Clendinning in the view which that gentleman had taken of the origin and course of development of the morbid growth in the preparation. He thought that the tumor bore an analogy, so far as regarded

its commencement, to the vegetations or excrescences on the valves of the aorta. In reference to that question which so often presents itself to our minds, in making post-mortem examinations, as to whether the clots of fibrin that are found occupying the cavities of the heart can have existed during life, he wished to state the result of certain observations that he had made. Such clots generally embrace the *columnæ carneæ* and *cordæ tendineæ*. Now he has observed, in various cases, that upon making sections of the clot and the tendinous cords, the clot did not, in fact, adhere closely to the cords; but that it surrounded them loosely, so that there was a considerable space between the clot and the cords. The idea had accordingly occurred to him, that by such observations we might be led to prove that the fibrinous clot had existed and embraced the *cordæ tendineæ* during life; and that the disproportioned size of the canals in the clot, compared with the cords, was the consequence of the incessant motion of the cords during the heart's action, and while the patient still lived.

Mr. Shaw had seen, in a heart which he examined for Dr. Wilson, three or four polypous excrescences, resembling in some respects that brought before the Society by Dr. Boyd. They adhered to the walls of the right auricle, were placed at some distance from each other, and varied in size from that of a pea to a hazel-nut. Instead of being smooth on their surface, as in the preparation on the table, or covered by a membrane continuous with the endocardium, they were rough and somewhat soft in texture, and presented every appearance of their consisting of fibrin. They had a general spherical form, and adhered by narrow stems to the surface on which they were placed. No diseased appearance was perceptible in the lining membrane of the auricle. Mr. Shaw had likewise seen a morbid appearance in another heart, which he thought might be described in this place. It was in a case of hypertrophy of the heart. On opening the left ventricle, a large amount of the dark jelly-like coagulum, which usually occupies the right cavities of the heart, was found. Upon removing this, a great extent of the cavity was seen studded with a fibrinous deposit, which filled the interstices of the *columnæ carneæ*, and also adhered to the smoother parts of the surface of the ventricles. This fibrin was of a hard friable nature, and of a dark colour; and it adhered with great tenacity, so that in some places, even where it was not entangled in the meshes of the *columnæ carneæ*, it could not be removed from the substance of the heart. Upon making sections of the walls of the ventricle, the endocardium was seen to be converted, at different

points, but more especially in two circumscribed parts near the apex, into a dense substance like cartilage; and it was at these parts that the adhesion of the fibrin was so firm.

Cartilaginous deposition on the surface of the spleen.

Dr. Clendinning exhibited a preparation of a spleen, on the convex surface of which a thick layer of a substance like cartilage was deposited. A section of the spleen had been made through the centre of the newly-formed part, so as to exhibit its thickness, which was about a third of an inch at the most prominent point, gradually decreasing towards the circumference. The cartilaginous deposit covered a space about an inch and a half in diameter. It appeared to involve both the fibrous and peritoneal tunic of the spleen. No particular symptoms had been observed during life in connection with the morbid structure.

Dr. Clendinning offered some observations as to the probable origin of this deposition; and likewise as to the formation of those opaque patches, so frequently observed on the surface of the various solid viscera of the abdomen and the heart. He combated the idea that they were invariably the result of inflammation, and considered that they depended on a modified action of the nutritive process. He possessed the most extensive opportunities of witnessing the dissection of bodies at an advanced age; and in scarcely one did he fail to find those changes in the surfaces of the organs referred to more or less distinctly marked. He was therefore induced to think, that the appearances in question were the result of a kind of action to which he would give the name of *aging*, in the particular parts.

Dr. Williams entered at some length into the history of the opinions as to the origin of the opaque spots so often seen on the surface of the heart, and alluded to by the former speaker. When he reflected on the largeness of the proportion of those cases of rheumatism in which the heart was affected coetaneously by inflammation seated either in the endocardiac or pericardiac lining, he was led to entertain the view, that these partial opacities resulted from inflammatory action.

Mr. Shaw saw many difficulties in endeavouring to comprehend how inflammation, affecting a membrane, prone like the pericardium to have the inflammation attacking it rapidly diffused over its whole extent when once it has commenced, and to have layers of lymph thrown out in abundance, so as to glue the two surfaces together, should occasionally be limited in its action within the narrow compass of the spots alluded to in the discussion, and give rise to no other change but opacity. Scarcely was a heart to be examined in

which an opaque spot on the anterior surface, near the base, was not to be seen. However beautifully transparent might be the pericardium covering the greater part of the surface of the heart, and however healthy the subject, still the patch of opaque membrane referred to was visible in nearly every body that was dissected. Such considerations made him slow to believe that they resulted from inflammation, especially an inflammation such as that which accompanies rheumatism. Nevertheless, he had observed, during the last winter, an appearance which seemed to bear upon the question. Upon showing at lecture the structure of the heart, in a heart removed from a patient about ten years of age, and who had died from the effects of an accident, he observed a circumscribed spot of inflammation on the very part where the opacity is generally seen. There was a bright red appearance, caused by increased vascularity, and a certain softening of the pericardium, in a space not larger than what might be covered with a shilling, just in the line of the septum ventriculorum, near the base of the heart. Every other part presented a perfectly natural appearance. Mr. Shaw considered it highly probable that, if this patient had survived, and the inflammation had subsided, an opacity in the pericardium would have been the result.

Mr. Charles Hawkins described a tumor that was found lying perfectly detached in the peritoneal cavity of a man whose body he had examined. It consisted of a dense substance like cartilage, and was about the size of a hen's egg. He conjectured that it had originally been a growth formed upon one of the viscera of the abdomen, and adhering only by a narrow pedicle, and that the pedicle had been gradually absorbed, so as to allow the tumor to fall loosely into the abdominal cavity.

Ununited fracture through a node on the tibia.

Mr. Arnott exhibited portions of the bones of the leg of a patient now under his care in the Middlesex Hospital. Before describing the appearances of the bones, he related briefly the history of the case. The patient, about twenty-two years of age, in the months of May and June of last year had been under the care of a surgeon for eruptions on the skin, and a node upon the right tibia. Mercury was given, and the patient left the hospital cured of the eruption, yet without the swelling over the tibia having entirely disappeared. After seven days he was brought to the Middlesex Hospital with a simple fracture of the bones of the right leg, in the situation of the node. It had occurred by his tripping and falling. The fracture was found to be oblique; and spasms of the muscles made it impracticable to

keep the ends in correct apposition. Within a few days after his admission ulceration took place in the integument covering the sharp projecting point of the upper broken portion, and matter gathered around the ends of the bones. Various plans were pursued to subdue the disposition in the muscles to be spasmodically affected, and to regain the proper length of the limb, which was much shortened in consequence of the retraction of the lower portion. Nothing, however, succeeded; and, in the meanwhile, the matter surrounding the seat of the fracture increased in quantity, and had a sanious appearance: sinuses formed in the direction of the knee, and the bone became more and more swollen where it was broken. Believing that the chief cause of the unfavourable condition of the limb depended on the peculiar state of constitution of the patient when he met with the accident, Mr Arnott endeavoured, by various plans of treatment, to correct that condition. He was reluctant at first to administer mercury, and accordingly gave him sarsaparilla combined with iodide of potassium. Subsequently he gave him the bichloride of mercury, from which the patient derived temporary benefit: the discharge diminished, and presented a more healthy appearance. No union, however, had taken place, although many months had elapsed. Mr Arnott determined next to try the effect of bandaging the limb with splints, so as to permit the patient to walk on crutches; but this plan was attended with no good results. He had recourse now to tonics, and gave him quinine, preserving the opening for the discharge of the matter at the wound free. Afterwards, he returned once more to mercury, and put him under a course of blue-pill till salivation was produced. As all these means failed, he felt himself called on to cut down upon the bones at the seat of the fracture, to endeavour to ascertain whether any detached portion of dead bone was interposed between the fractured extremities, so as to prevent their union. He could not, however, find any such loose piece of bone. During the months of February and March, the patient was seized with repeated attacks of erysipelas, and great fears were entertained for his life. Upon his recovery from these attacks, Mr. Arnott determined to remove the limb below the knee, and amputation was accordingly performed in the end of April. It has to be added, that no indications of syphilitic disease were to be observed in any of the other bones, during the long period that he remained in the hospital.

On examining the condition of the bones of the leg, it was first noticed that union had taken place in a perfectly solid manner, and without any preternatural ap-

pearance, except a certain degree of shortening, in the fibula. In regard to the tibia, the two fragments were joined together by a thin bridge of bone at the back part. They were displaced very considerably. Both ends were swollen by the accumulation of granulations of new bone, which assumed the appearance of caries.

Mr. Arnott observed that the dissection of the limb had convinced him that it was not in consequence of any peculiar state of constitution of the patient that union had not been procured. This was evinced by the perfect union that had taken place in the fibula. He conceived that the unfavourable course which the accident took was owing to the fracture having occurred in a part where the bone had been previously diseased. It followed from there being this disease seated in the bone, that matter very early accumulated around the broken extremities of the tibia; so that the fracture was converted from a simple into a compound one, and caries then commenced in the ends of the bone. Moreover, the retraction of the inferior portion of the tibia, caused by the spasmodic action of the muscles of the calf, aided by the oblique course of the fracture, could not be counteracted so as to bring the surfaces into a favourable position for effecting a union.

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, June 2, 1840.

Age and Debility	12	Hæmorrhage	2
Apoplexy	2	Whooping Cough	5
Asthma	5	Inflammation	0
Cancer	1	Bowels & Stomach	5
Childbirth	2	Brain	2
Consumption	25	Lungs and Pleura	2
Convulsions	12	Influenza	2
Dentition	1	Liver, diseased	3
Dropsy	3	Paralysis	2
Dropsy in the Brain	1	Small-pox	4
Epilepsy	1	Stone & Gravel	1
Erysipelas	6	Unknown Causes	103
Fever	5		
Fever, Scarlet	2	Casualties	4

Decrease of Burials, as compared with the preceding week } 3

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 5' 51" W. of Greenwich.

May.	Thermometer	Barometer.
Wednesday 27	from 36 to 67	29.91 to 29.93
Thursday 28	40 73	29.82 29.84
Friday 29	51 67	29.95 30.16
Saturday 30	43 71	30.25 30.26
Sunday 31	49 5 73	30.22 30.26
June.		
Monday 1	46 77	29.97 30.14
Tuesday 2	50 65	29.78 29.87

Prevailing wind, S W.

Except the 2d inst. generally clear. A little rain fell on the morning of the 29th ult. Lightning and loud thunder, accompanied with heavy rain, from about 8 to 9 in the morning, and from about noon to 1 in the afternoon, of the 2d.

Rain fallen, .03 of an inch.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, JUNE 12, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

— FRACTURES.

Fracture of the Neck of the Femur, continued.

—Treatment—Osseous Union of Neck, why unfrequent?—PATELLA—Symptoms—Diagnosis—Prognosis—Treatment.—Bones of the Leg—Tibia—Fibula—Bones of the Foot—Calcis—other bones.—STARCH BANDAGE—Inflammation of bone—Abscess.

Treatment.—The reduction of fracture of the neck of the femur is as easy to accomplish as it is difficult to maintain. Counter extension is made either by an assistant holding firmly the pelvis, or by passing under the injured thigh a band; another assistant seizes the foot, and makes extension at first in the direction of the displacement, and afterwards in its natural direction, until it is restored to its proper length.

Here the hand applied to the point is almost useless, because of the thickness of the part surrounding the joint, yet, in some cases, the surgeon raises the great trochanter and directs it forward, to lessen the tension of the posterior part of the capsular ligament, and to facilitate reduction.

Before we proceed further, I must refer you to Sir A. Cooper: he says, "Deceived in my endeavours to cure intra-capsular fractures, and seeing the health of patients suffer under the action of the means employed to procure union, if I were myself the subject of this kind of fracture I

should place a pillow under the whole length of the limb, another should be rolled up and placed under the knee, and the limb should remain in this state for ten days, or a fortnight—until, in fact, pain and inflammation had disappeared; then I should get up, sit in a high chair, and, for the purpose of preventing painful flexion, and going on crutches, I should at first rest the foot lightly on the ground; gradually I should rest more upon it until the ligament was thickened, and the muscles had recovered their power; then I should use a high heel shoe to lessen my lameness. Thus treated, patients in an hospital get about on crutches in a few days, and, after some months, they can get about without any assistance." This advice has been a good deal followed at home and abroad; but a question here suggests itself—are we never to attempt to procure union in intra-capsular fracture? This would be an unhappy conclusion to come to, because, in the first place, I believe osseous union may take place in intra-capsular fracture, and, if the parts were kept in apposition, I believe it would frequently happen; and, in the second place, how are we to ascertain whether a fracture be intra- or extra-capsular? So long as this doubt remains, so long all appropriate means of treatment should be employed.

There are few fractures for which so many machines have been invented, and the insufficiency of most of them has been freely acknowledged. It is necessary to use such an apparatus as will permanently oppose displacement: those by which continued extension is applied are, I think, alone capable of fulfilling this indication.

Among the apparatuses for making continued extension, many incompletely accomplish the object; that of Vermandois is one of the earliest extension apparatuses in which the principle is properly carried out: it resembles that of Desault, though

more complicated, and, therefore, less generally applicable; but I think the straight splint, with all its simplicity, answers the purpose better. In many cases, Mayor's apparatus succeeds, especially where the fracture is complicated; but probably, of all, Hagedorn's idea is the most ingenious: he has a long outside splint, from which proceeds a foot board wide enough to receive both feet, which are fixed upon it; thus extension of the fractured thigh is made, whilst counter-extension is kept up by the sound limb.

The semi-flexed position of Pott is open to more serious objection than in fracture of the shaft: the position on a double inclined plane is better, as in the method of Earle, Bell, Dupuytren, Amesbury, and others. Some surgeons employ exclusively the semi-flexed method; they prefer it to the straight position, because "the inconvenience to the patient is less, and because the results are more advantageous."

Yet it is scarcely possible, unless the fragments be involved one within the other, to obtain by this plan a cure free from deformity or shortening. For these reasons I prefer the extended position, because I believe a cure almost without shortening may thus be obtained. Still I have no hesitation in expressing my belief that the advantages of this position have been much exaggerated, and that, in most cases, shortening, to a certain extent, exists.

Here I terminate what I have to say upon the means employed in the treatment of fractures of the femur. I have alluded to many plans, but it is impossible, at this time, to consider them more at length.

We have seen that permanent extension forms the basis of most of them; there are certain circumstances connected with this plan of treatment which must not be lost sight of. In many persons, in consequence of the extreme delicacy of the skin, compression excites severe pain, inflammation, and even gangrenous spots; and this is particularly to be looked for in women, and old or debilitated persons. Often they oblige us to abandon permanent extension, and to limit our treatment to position; yet these inconveniences are not of such a nature as should cause us to discard this method; but they should induce us to watch carefully that no improper pressure is made. When well applied, the plan has this great advantage, that the necessary motion of the patient will not derange the fragments. It has been recommended, as a means of facilitating those movements, that a broad strap should surround the pelvis; that a cord should be attached to it, and pass through a pulley; that one end of the cord should be within the patient's reach, who can thus

raise himself with very little trouble. Under favourable circumstances, consolidation of a fracture of the neck of the femur is a tedious business: the patient should not get up in less than two months, and should rest no weight on that limb in less than three months, and even then not without crutches. But even with all our appliances, perfect coaptation of the fragments can scarcely be expected; all that our art can do is to restore the limb to its proper length, to struggle against the tendency to rotation outwards, and to maintain things in this state long enough to allow of fair consolidation. Again I say, our means for accomplishing these objects are imperfect: permanent extension is I believe the only means by which the proper length of the limb can be maintained; but, in many cases, patients, and especially aged persons, cannot bear it. The tendency to rotation outwards is, perhaps, never completely overcome: the means which are employed upon the foot for the purpose do not completely overcome it; for a portion of their action is lost at the ankle and knee joints.

THE PATELLA.

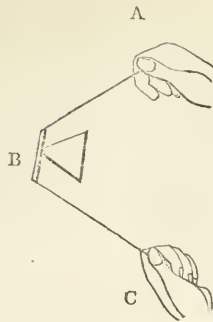
The form, the size, and the mobility of the patella, enable it to elude many of those shocks which tend to fracture it, and to the action of which it is greatly exposed; but its peculiar position predisposes it to fracture from muscular action. Those fractures produced by muscular action are more or less completely transverse; those occasioned by violence applied directly on the part are very variable. The patella, when fractured by the contraction of the extensors of the thigh, usually suffers, in the action of jumping, kicking, or in an attempt to balance the body at the moment of falling: when fractured by direct violence, it happens in a fall upon the knee—in striking the knee against some hard body. In the former case, the patella is placed in a very unfavourable position; for when the leg is flexed on the thigh, its posterior surface no longer corresponds in its whole extent to the former, whilst its inferior angle, deprived of all support, is firmly held by the ligament, as in fig. 1; but the extensors have as much more facility in rupturing it as the limb is more flexed, and the power is applied more perpendicularly to its fibres. See diagram 2.

In many cases, the fall is not the cause, but the effect of the fracture; and thus it happens, frequently, that the contusion of the part does not seem to bear any proportion to the presumed intensity of the force of a blow sufficiently violent to fracture the bone. When a patient is in the erect position at the moment of the accident, the first effect is usually to fall on the knee, in

Fig. 1.



Fig. 2.



consequence of the sudden and involuntary flexion of the leg. If, on the contrary, the injury has happened in a fall, he cannot get up: if we place him on his legs, he cannot step forward without falling, because the moment the femur and tibia are removed from the straight position, nothing can arrest the disposition to flexion; he may, however, make many steps if the injured leg be slid along the ground, provided he support the body on the sound leg.

These symptoms are common to rupture of the rectus tendon, the ligament of the patella, and fracture of the patella itself; but, in the affection we are considering, it is at the level of the patella, and not above or below it, that the depression caused by the separation of the fragments is to be looked for. In transverse, oblique, compound, or comminuted fracture of the patella, the rectus tends to draw up the fragment into which it is inserted. The displacement which results from the action of this muscle is comparatively trifling, when the fibrous tissue investing the bone is not much injured; and this is usually the case, when the bone is not fractured by muscular contraction: it may be very considerable when that investment is completely destroyed, as is commonly the case, when produced by muscular action. The extent of separation is increased when the limb is flexed, because the inferior fragment is depressed by this action; it is diminished, on the contrary, when the patient is placed in bed, and the heel is raised. The muscles are then relaxed; the fragments are brought nearer to each other; they may be brought into absolute contact, and crepitation may be produced: this Sir A. Cooper denies.

Prognosis.—Fracture of the patella, when simple, has very little tendency to interfere with life; but when comminuted or compound, for obvious reasons, it may involve the knee joint in danger. Even when simple, if it be transverse, it rarely happens that union by bone takes place, and this,

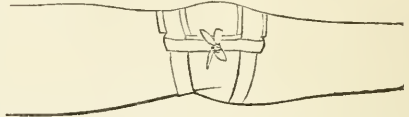
not because "there is not enough of injury done to the part, not because synovia prevents the formation of callus, not because the subpatellar adipose matter is insinuated between the fragments," but because the aponeurosis is completely divided, and the fragments are not in absolute contact. Usually the union takes place through the medium of fibrous tissues, thus described by Sir A. Cooper. The process of ossification is little developed, the inferior retains anteriorly very nearly its natural appearance; the superior fragment is covered by a slight stratum of bone, therefore the process of ossification is rather more active in the superior than the inferior fragment. The posterior surface of each fragment is unchanged. Between the edges of the torn aponeurosis a small quantity of blood is effused; this is absorbed; in a few days replaced by plastic lymph, which is insinuated between the fragments to which it is strongly adherent; this lymph becomes organized, and changed into a fibrous tissue. If the fragments be nearly in contact, this fibrous tissue will be dense, and the fibres short; if they be separated, the medium will be less dense, and the fibres longer. If, after the fibrous union, the fragments be near each other, the functions of the limb are little deranged; but when the interval between them is considerable, the action of the extensor muscles is more or less completely destroyed; the knee is involuntarily flexed, and without a knee-cap progression is impossible. Where the fracture is vertical, or when oblique or transverse, if apposition has been preserved, osseous union will occur: can stronger evidence be required to prove the cause of non-union by bone in the majority of cases? Besides, Mr. Gulliver has shown, that in many cases of transverse fracture, where bony union has failed, osseous deposit frequently takes place on the fractured extremities, so that the fragments assume the appearance of two symmetrical bones. His experiments clearly show that when the aponeurosis is completely divided, as in the fracture from muscular violence, osseous union is not to be expected; that in those transverse fractures in which bony union fails, the fragments and intervening fibrous tissue are plentifully supplied with blood vessels; (the defective reparation therefore is not referable to imperfect nutrition;) that osseous union is simply the effect of irremovable coaptation of the fragments, the provision for which, in certain forms of fracture, is the integrity of the aponeurosis in front of the bone.

Treatment.—The treatment of fracture of the patella consists in a particular position of the limb, and the application of an apparatus for keeping the fragments as

nearly as may be in contact; and this must be speedily accomplished, because the cure is rapid. The proper position is one in which the extensor muscles are relaxed to the utmost extent: this object is obtained by flexion of the thigh and extension of the leg: to accomplish this, we place the leg on an ascending plane, so that the heel may be raised from nine to eighteen inches above the bed on which the patient lies. Sabatier, to avoid the pain in the ham, of which patients complain, when placed in this position, laid the patient on the injured side, the thigh forcibly flexed, and the leg slightly flexed on the leg. If there be much tumefaction or inflammation at the part, it can be properly treated during the time the patient maintains the ascending position; as soon as the tumefaction has subsided, an apparatus for keeping the bones in contact may be applied. I say an apparatus, because the mechanism of all is similar, whether it be the least perfect, the *kiastre*, those of Purmann, of Bass, of Petit, the capsule of Kaltschmidt, the concave plates of Bel-

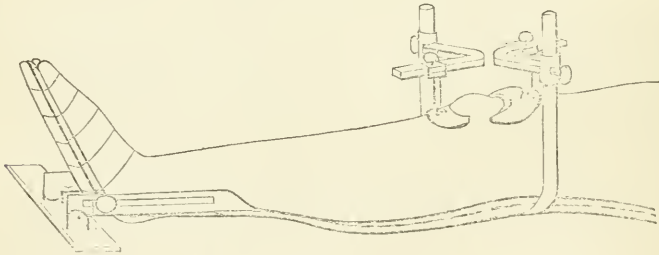
and others, placed above and below the fragments, those of Brambilla, of Aitken, and Cooper; the principal difference being, that in some cases a long splint was placed at the back of the leg, and in others, a circular compression was made above the knee for the purpose of paralyzing the extensors. All have acknowledged the necessity for acting upon the superior fragment, so as to bring it towards the inferior, which is prevented from descending. The following figure (fig. 3) would represent the more simple of them.

FIG. 3.



The following ingenious apparatus is proposed by Mr. Lonsdale for the purpose. (fig. 4.) What is important in transverse fracture, is strong flexion of the thigh, and

FIG. 4.



continued extension of the leg. Sabatier's position is unsafe, and there is much security against flexion in the long back splint; the endeavour to deaden the action of the muscle is not advisable, and if the other means are attended to, will be totally unnecessary. Although it is well to bandage the limb to prevent œdema, I do not like to rely on the figure of 8 bandage alone, for the purpose of preserving the fragments in contact; I prefer the leather bracelet of Bell and Cooper; but this is one of the injuries in which, if bandages are used, they should be starched. The treatment of longitudinal fracture is much more simple, rest and position are usually sufficient; the knee should be extended, but, except as a matter of comfort, flexion of the thigh is not necessary; a horizontal plane will suffice. But as these longitudinal fractures are caused by direct injury, they are sometimes complicated; inflammation may be intense, and may require very active antiphlogistic treatment: Sir A. Cooper thinks we ought to apply lateral compres-

sion to the patella in these cases. If the injury be complicated by an opening into the joint, the accident is a very serious one; it may be sufficiently so to require immediate amputation. If the circumstances be less unfavourable, we may try to save the limb; we should then endeavour to bring the wound together, and in such a case I knew the white-of-egg compress, placed over the joint, to succeed admirably. Sir A. Cooper suggests the employment of a suture, to make the apposition so exact as to prevent the escape of synovia, and never to use poultices or fomentations, as they prevent adhesion. Two or three months are necessary for complete consolidation; by that time the medium of union has acquired solidity enough to resist the action of the extensor muscles. A case occurred to Dupuytren, where, soon after recovery from fractured patella, the patient was subjected anew to causes of fracture, and instead of the bone the ligament gave way.

In all fractures of this bone passive mo-

tion at the knee should be practised as early as it prudently can. Sir A. Cooper advises that the apparatus should be removed after five weeks in adults; after six weeks in old men; and from the time the fibrous substance which unites the fragments is resistant enough, the limb should be moved each day up to complete flexion. Boyer leaves the apparatus on for two months without moving the limb; but this plan is more likely to be followed by ankylosis.

If, after the cure, the power of flexion be lost, unless a long time has passed we should not relinquish the hope of obtaining the power of moving the knee. Sir A. Cooper succeeded, by frequent exercise, in restoring power to a woman who, eight months before, had fractured both patellæ. In such cases we flex the limb, then desire the patient to extend it; at first, his power of doing so is very small, but after a time we succeed in restoring much of the ability to use the knee.

BONES OF THE LEG.

The bones of the leg may be fractured together or separately, but they most frequently suffer together. They may be fractured at different points of their extent, but the most frequent seat of the injury is the point of junction of the inferior with the middle third—the point where the tibia is thinnest, and is, as it were slightly twisted upon itself. The two bones may be fractured at the same or at different levels, depending on the manner in which the injury has been occasioned. In children the fracture is commonly transverse; in adults it is generally oblique, and in that case, usually, its direction is downwards and inwards, so that the superior fragment projects under the skin at the inner side and front of the leg. The fracture may be simple or compound, with much muscular, or vascular, laceration. If the bone be healthy, I doubt whether muscular action alone has ever been sufficient to fracture it; but where the bone has undergone certain changes in structure, muscular contraction has produced fracture. It has been known to occur in persons suffering from scorbutus and cancer. It may

occur in consequence of a fall upon the feet from a height; and in such cases the superior fragment has been known to be driven through the integuments into the ground, but in the greater number of cases it is fractured by direct violence—the kick of a horse, the passage of a wheel, the fall of a stone, or other violence.

If the fracture be transverse and high, there is little displacement, and patients have often walked about after it; if it be situated near the middle or lower portion of the leg, there may be much displacement; the muscles of the calf, and the deeper posterior muscles, by drawing the foot upwards and backwards, force up the inferior fragment behind the superior, and shorten the limb.

Diagnosis.—Fractures of the leg, in consequence of the superficial situation of the bones, are usually easily distinguished. If the fingers be passed along the inner side of the spine of the tibia, or the outer border of the fibula, an irregularity is easily discovered; this, with the mobility at the point, crepitation, projection of the fragment, and deformity of the limb, render the diagnosis easy.

Prognosis.—These fractures are less serious than those of the thigh; they are rarely accompanied by so much displacement, and are more easily reduced and maintained. When the fracture is near the knee or ankle-joint, motion is for a time interfered with, and the injury more serious.

Treatment.—Reduction is usually easy: an assistant holds the knee firmly, whilst another makes extension of the foot; the hand is then pressed gently upon the part, and the fragments brought into coaptation. Some people apply a compress between the two bones, to preserve the interosseous space; but this is less important than in fractures of the forearm, and is commonly useless. The limb may be laid on a pillow, in the semiflexed position, after the manner of Pott, or on one of the variously modified apparatus in which the semiflexed position is maintained, but the limb should not be laid on its side. The following instrument is used commonly (fig. 5). The bandage, in either case, may

Fig. 5.

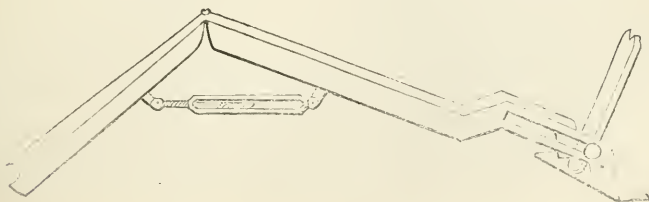


Fig. 6.



be of starch, or it may be simple, or the limb may be maintained by junks (fig. 6). It may be extended, and so maintained, by starch or other bandage, or junks, or splints; for certainly position is of much less importance here than in fracture of the femur: it may be treated after the plan of Larrey or that of Mayor; but, on the whole, some modification of the semiflexed position answers best. It is necessary to be careful about the heel, because pressure upon it will sometimes induce a slough. In the machine (fig. 5), there is a hollow to receive the heel.

Whichever means may be employed, it is necessary to be upon our guard against accidents; and before the fortieth day it is not wise to substitute the simple roller for any apparatus which may have been previously used. My own impression is decidedly favourable to the use of one or other of the modifications of the immoveable apparatus; by facilitating moving the limb, in or out of bed, many inconveniences attaching to keeping the bed for a month or six weeks are avoided; and in most cases the patient may move about as soon as the bandage is dry.

TIBIA.

Fracture of the *tibia* alone often follows violence directly applied upon the leg, while the *fibula* escapes. It may be fractured at any point of its extent; it is often transverse, and sometimes the symptoms are obscure. The displacement is not usually great; the fragments do not ride, because the *fibula* acts as a splint to prevent it.

In the majority of cases, this is not a serious injury, and the treatment is simple: it will often do well even with a simple roller, but generally, unless starched, more is required. Where the fracture implicates the knee or ankle joint, the case is very different. In oblique fracture of the superior extremity of the bone, Sir A. Cooper recommends that the limb should be placed in extension; "the femur, in this attitude, tending to preserve coaptation, maintaining the articular surfaces in their exact position." At the same time, a

paste-board splint and a roller must be used. He also advises the use of the double inclined plane when the fracture does not penetrate the joint; but the apparatus, fig. 5, perfectly accomplishes the object. When the inferior extremity of the bone suffers, crepitation is felt at the ankle-joint during flexion, extension, or rotation, and generally there is a slight inclination of the foot outwards or inwards, according to its direction. Sir A. Cooper recommends, as in fracture of the *fibula*, that means be taken to incline the foot in a direction opposite to that which the fracture has given it, and to bring the great-toe in the line of the patella.

FIBULA.

Fracture of the *fibula* is an accident which has excited much more attention than that of the *tibia*. This is at once evident on referring to the elaborate essays on the subject by Bromfield, Petit, Pott, David, Desault, Bell, Boyer, Richerand, and Dupuytren.

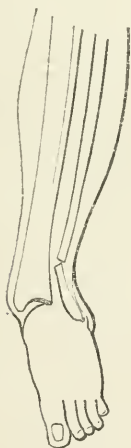
The frequency of this fracture is explained by the tenuity of the bone, its superficial situation on the outside of the leg, and by the important part it plays in the mechanism of the ankle-joint. Though the *fibula* may be fractured at any point of its extent, Dupuytren believed that fracture of the inferior extremity of the bone was, as compared to all other fractures of the leg, in the proportion of one to three.

Pott and Fabre first made known the mechanism of this fracture. The *tibia*, resting on the surface of the astragalus, transmits through it the whole weight of the body. The *fibula* has nothing to do with this vertical pressure; it is only destined to complete externally what the internal malleolus does internally. It opposes, like the internal malleolus, lateral motion of the ankle-joint. If the foot be violently abducted or adducted, which may happen in falls, or false steps, the astragalus, in the latter case, presses outwards the inferior extremity of the *fibula*; in the former, the calcis presses the same upwards, with a force equal to the weight of the

fall. In either case, the immediate effect of the effort to which the fibula is subjected is directed, on the one hand, upon its inferior tibial articulation, which might be ruptured were its ligaments not so powerful; in the other, upon the superior tibial articulation, whose surfaces are brought more closely in contact. These articulations resisting, and the bone not suffering outward or upward displacement, it gives way at the point where the least resistance is offered, generally the outer ankle.

When the fibula is fractured, as a consequence of such distortion of the foot, it is almost always at its inferior extremity that it occurs. Directly after the accident, the displacement is not usually great, and its articulation with the tibia, unless the ligaments be ruptured, prevents riding. The displacement is produced principally by the action of the long flexor of the great toe, which draws the fragments inwards towards the tibia. As the upper part of the inferior fragment is drawn inwards, its inferior extremity is directed outwards, and there is no longer any obstacle to the outward displacement of the astragalus; the foot then assumes the position of abduction, and this is as much more decided as the fracture is near the ankle joint, and the outward projection of the inferior fragment greater, (fig. 7*.) The

Fig. 7.



abduction may be so great as to cause the superior articular surface of the astragalus to be directed inwards, and the sole

of the foot outwards. Whatever may be the mechanism by which this fracture is produced, the displacement is always nearly the same; the foot being no longer restrained externally, yields to the action of the peroneal muscles, and carries still further, with it, the outer ankle.

Diagnosis.—Mistaken or unskillfully treated, the astragalus at last may project under the inner ankle; may painfully distend the ligaments and the soft parts; the articular surface may become inflamed; at last the skin may give way, and the joint be opened; then follow suppuration, caries, and amputation, or death. It is, therefore, of serious importance to form a correct diagnosis in these cases, a mistake exposing the patient to vicious consolidation, consecutive luxation, as well as the effects I have just named. Whenever, therefore, we have reason to suspect the existence of this fracture, the part should be examined with the greatest care. When the fracture is seated at the middle or upper part of the bone, it is not so easy to distinguish it, because of the thickness of the soft parts which cover it, and the tumefaction which is often produced in them. When, on the contrary, its inferior portion suffers, surrounded only by tendons, and subcutaneous, the diagnosis is generally easy. We must not, however, be deceived by the apparent depression between the peronei tendons, which is often found in sprains, when the bone is intact.

Symptoms.—Extreme facility in the lateral motions of the joint, unnatural mobility of the inferior extremity of the fibula, severe pain felt by the patient when under examination, the inequality of the fragments, and crepitation, are the ordinary signs of this fracture. Often, the tumefaction is so considerable as to prevent our making out these signs. In those cases we must employ the necessary antiphlogistic means of dissipating the tumefaction, and then ascertain the exact nature of the injury.

The *prognosis*, in ordinary cases, is not unfavourable, if proper means be used; but, if the affection be not recognised, unfavourable or even fatal consequences may result. It is often complicated with luxation of the foot. The occurrence of luxation has now and then caused the surgeon to overlook the fracture, and the most formidable consequences have followed.

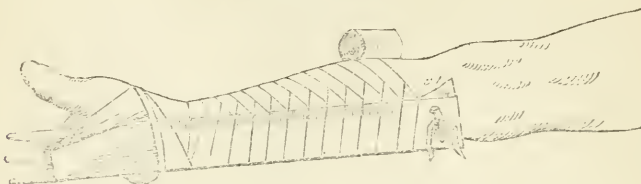
Treatment.—Riding of the fragments can rarely happen, because the tibia prevents it, so that extension and counter-extension are not necessary. What is necessary is to bring the fragments together; to slightly adduct the foot, that the external lateral ligament may carry downward the inferior fragment, whilst the inferior extremity of the external ankle is pressed inwards for

* This and several other diagrams we owe to the liberality of Mr. Lensdale, who used them in his very excellent treatise on Fractures.

the purpose of directing outwards the upper end of this same fragment. The reduction having been accomplished, such an apparatus should be applied as will be opposed to the turning out of the foot. For this purpose what is required is, to continue what is done in reducing the bone, fix the

foot in adduction, and impress upon the outer ankle, by means of the lateral ligaments, a sort of continued extension, by which it is kept in a direction downwards and inwards. For this purpose some modification, the following, for instance, of the apparatus of Dupuytren, will be

Fig. 8.



found to answer the purpose best: (fig. 8.) What is essential is, to apply a splint, which shall extend from the knee to four inches below the inner ankle, under which a cushion should extend from the knee to the ankle. A roller is applied, from the knee downwards, to fix them. When it gets to the small of the leg it is passed over the instep, and through the notches at the inferior end of the splint. In this way the foot is inclined towards the splint, is fixed in adduction, and is prevented from being everted; and no painful pressure is exercised upon the seat of injury. The immoveable apparatus answers very well if this principle be kept steadily in view.

Whatever be the apparatus, the consolidation is completed by the fortieth day. The ankle is then bandaged, and the patient must not be allowed to walk without crutches. When the fracture is at the middle of the bone the injury is more easily repaired, and there is usually less tumefaction.

FOOT.

The form of the bones of the foot, the little advantage they offer for the action of external violence, their power compared to their length, the resistance offered by the fibrous tissue which unites them, and their mobility, are so many circumstances which render their isolated fractures almost impossible, especially by indirect violence. A direct cause, acting with violence upon a small surface, is alone capable of producing it, and then there is always either a wound of the soft parts, or a severe contusion, which constitutes a more serious injury than that of the bone. In such cases, generally, several bones belonging to the tarsus, or metatarsus, or toes, are fractured by direct injury, when applied over a large surface. It is thus that the passage of a wheel, the falling of a heavy body, or a fall from a great height upon the foot, usually

produces this kind of accident. In these cases the injury of the soft parts requires most attention, the fracture not requiring the application of any bandage. What was said of similar injuries to the carpus and metacarpus perfectly applies here. Still, among the bones of the foot, there is one whose fractures are susceptible of particular description, because they differ from the others as to causes, symptoms, and curative indications—I mean the calcis.

THE CALCIS, from its size, and the point of insertion it furnishes to the extensor muscles of the foot, is not unfrequently subject to fracture. The more common causes of it are, gun-shot, or other violence, directly applied, pressure between the astragalus and the ground, by coming upon the heel in a fall from a height. In these cases the fracture may occupy different points, and be in different directions. There is also a fracture which is produced by contraction of those muscles which are inserted into the tendo Achillis. This may happen from a fall upon the toes during the exertion of jumping, and in such other circumstances as occasionally produce rupture of the tendon; these fractures, owing to muscular action, are always transverse, and behind its articulation with the astragalus. The posterior fragment is alone displaced by the action of the muscles ending in the tendo Achillis, and it is generally trifling; thirty to forty days are usually sufficient for its consolidation. In some cases the medium of union is fibrous, but in a majority of cases it is osseous.

It is thus characterised: at the moment of a fall upon the feet, or a violent contraction of the muscles of the calf, the patient feels a crackling, and falls down; an acute pain is felt at the heel, and he can neither raise himself, walk, nor move the foot. The heel is a little less projecting and higher than usual, but this is not con-

siderable, because the posterior fragment is retained by the aponeurotic fibres which are fixed upon it.

A simple fracture of the calcis is not a serious injury, but it may be so, when complicated by a wound or violent inflammation, or the presence of a bullet or other projectile; it may cause caries or necrosis. It is easy to reduce this fracture; the knee is flexed, and the foot is completely extended; the fragment is then usually replaced without difficulty; but it is not so easily maintained. For this purpose, the position in which the limb is placed, to reduce it, must be continued, as in the rupture of the tendo Achillis. Heister states that a surgeon of Paris, finding it difficult to maintain reduction, cut the tendon. The apparatus we figured in treating of rupture of the tendo Achillis brings up the inferior fragment, but beyond relaxation of the muscles of the calf, it is necessary to act upon the superior fragment. This may be done by using such an apparatus as Monro employed for making perfect extension in rupture of the tendon. Elastic gum rings will serve to keep down the upper fragments, and the whole may be well kept together by a starch bandage. The patient must not too soon begin to move. To avoid the great dragging of the muscles upon the posterior fragment, the patient should at first use a high-heeled shoe, the height of which may be diminished from day to day until the foot is restored to full freedom of action.

STARCH BANDAGE.

Having made frequent allusions, while treating of fracture, to the starched bandage, some further remarks may not be out of place. The old treatment of fractures necessitated long confinement to bed, which, besides other inconvenience, caused at certain points by pressure, generally produced considerable derangement of the digestive and other functions, even when the accident occurred in a person in good health; all these matters were aggravated if the patient were out of health or advanced in age. The plan of Amesbury was intended to remove these inconveniences, to preserve immobility of the injured part, without confining every other part; the young man was no longer to be ennuied; the old man was no longer to exhaust his little remaining power by confinement in bed; both might in many cases, after three or four days, attend to their ordinary occupation.

The starch bandage invented by Seutin, may be constituted of a common roller or a tail bandage; in either case the starch is not applied upon the skin, but upon the outside of the first turns; over this a second turn of the bandage is passed, over that a second layer of starch, and so on.

A tail bandage, or a common roller, may be used; if the latter, each toe is rolled; extension and counter-extension are then made by assistants; the bandage is rolled from the foot to the knee. The first layer being applied, it is covered over with starch; two card-board splints, previously softened by immersion in starch water, are placed on the sides of the leg, in front of the limb; they leave between them an interval of an inch, in which, when necessary, the bandage can be easily cut. A second bandage is rolled over these splints, another thick layer of starch is laid on, and over this a simple roller. The limb is now put to rest on a simple cushion, and the bandage tied: if left to itself, this may occupy from 36 to 48 hours, but it may be accelerated by bags of hot sand, by heat of the sun, or other contrivances. When the fracture is simple and without wound, this is the ordinary apparatus; but if it be compound, holes are made in the apparatus to correspond with the wounds; the fragments are thus kept steady when the wound is dressed. As soon as the apparatus is quite dry, it forms a firm cast, which surrounds the limb, maintains perfect immobility, and allows of the patient moving freely in bed, or about on crutches, the limb being supported in a stirrup. Seutin applies the apparatus at once; neither tumefaction, nor inflammation, are with him obstacles; he has no fear of gangrene; if, by inspecting a toe, any suspicion of evil is raised, the bandage is slit down for a certain distance, and another roller applied to sustain the parts. Although the apparatus does not relax, after a certain time it is less exactly applied upon the limb than it was at first; the tumefaction has disappeared, or the soft parts are to a certain extent atrophied; in this case, if considerable, he makes a section of the apparatus, and applies another roller which causes the cut borders to overlap.

Although Seutin and Velpeau have no hesitation in advising the use of the apparatus whenever the patient applies for relief, whatever may be the state of the parts, I have. If you apply the apparatus before tumefaction has come on, gentle compression will restrain it; if great tumefaction be already developed or in progress, you had better wait for it to subside, or you will find the apparatus soon very loose, or strangulation and gangrene may occur. Seutin also believes, that the moving about tends to produce a more rapid consolidation; this may be fairly doubted, as we know that perfect immobility of the fragments is probably the most essential element of cure. I readily admit that it is a serious evil for an aged, emaciated, or debilitated person to be confined to bed, and to respire a vitiated

air; but still it does not follow that we ought to order him to move about. To give him the power of changing his position in bed as often as he likes, to remove him to a sofa or a carriage, all of which the starch apparatus admits of, is no slight boon; but if you go beyond this, you go, in my opinion, further than is prudent, and expose your patient to the danger of an artificial joint, or a deformed callus. And even to admit of this, it is necessary that the adaptation of the apparatus to the limb should be exact; and for this, careful watching and the longitudinal section may be required, which defeats one of the objects accomplished by the bandage, cheapness. It seems to me better to renew the apparatus than to do this; or it may be accomplished by softening, with warm water, the part between the edges of the mill-board, and then applying a roller which will bring all in contact, or by pouring into the space enough of semi-fluid plaster to fill it up.

The assertions of Sautin are not simple theoretical speculations, but deduced from numerous cases observed by him, or communicated by eminent Belgian surgeons who have adopted the plan. Those cases, in his last report, amounted to 151. It has been much used in France; Velpeau alone, twelve months ago, stated that he had particulars of 150 cases treated in this way. To what extent it has been used in this country I cannot say; Mr. Arnott has used it with good effect, and my own experience of it, during the last two years, is very favourable. Its inventor uses it in all kinds of fracture, and it certainly is a good auxiliary to any system of treatment which may be employed. He also uses it in luxations, sprains, wounds of joints; in fact, wherever immobility is desirable. In wounds, in sarcocele, in tumors of the breast or other glandular structures, in club-foot, and a great variety of other affections.

OSTEITIS.

In spite of the numerous observations which we possess relative to inflammation of bone, I am not satisfied that we possess, even at the present moment, any facts which present all the characters of inflammation of other organs, namely redness, heat, pain, and swelling. It is not that we do not often meet with, in patients, some of these symptoms, because we often see persons suffering from severe pain in the interior of a bone which is enlarged, and the hand applied to the limb experiences considerable heat; but is there here a great vascular injection of the bone itself? These are points yet remaining to be verified. I have seen bones slightly reddened, and presenting very much of the appearance produced by madder, but the

periosteum was not injected, so that I doubt whether it constituted true osteitis. I have known bones to be evidently tumefied; grasping them I have felt a burning heat, and pressure caused pain. These bones were so hard that I could not refer their enlargement to tumefaction of the periosteum alone, and therefore I judged that the substance of the bone itself was tumefied by the distension of the numerous blood-vessels which penetrate it. Farther, these bones were reduced to their natural condition by antiphlogistic means, long employed. In such a case a fluctuation under the *fascia lata* was apparent; an incision was made, and medullary matter, such as I described in speaking of the periosteum, was exposed.

When, after a fracture, the action is set up by which callus is to be formed, we have often seen, besides tumefaction and infiltration of the periosteum and the soft parts, a certain softening of the fragments of bone, a disappearance of their angles, and consequently, I apprehend, an organic action in the bone itself, characterised by increased vitality. This state, I think, may fairly be called inflammation, though the physical phenomena proper to inflammation of soft parts are wanting. In certain cases of caries, the bone is unquestionably inflamed; this is proved by the redness of the ulcer, and the state of injection of the delicate web which lines the cells. Again, in certain cases of regeneration of bone, it is not only the external and internal periosteum which are charged with the work of reparation, but also the laminae of the healthy bone itself. Now how could this happen without inflammation?

I therefore assume that there is true inflammation of bone, not that it is manifested by the ordinary signs of inflammation of the soft parts, such as a vivid redness, and an evident vascularity; but by a very sensible development of the vessels of the external and internal periosteum, and those which creep between the laminae and fibres of the bone itself; probably by an injection of the membranes, which, according to Howship, line the osseous canals; by an increased activity of the whole vascular apparatus, whose business it is to secrete the materials for repairing that which has been destroyed. What I have now said more particularly applies to inflammation of the compact substance of bones; in the spongy structure the signs are more decided.

Inflammation of bone may be acute or chronic; but although this distinction can be made out, the progress of the acute form is so slow, as compared with the acute inflammation of other tissues, that, by some persons, it is held to be always chronic. It is hardly necessary for

me to point out, in this place, the various pieces of evidence upon which those opinions rest, because the distinction is practically of no importance; it is simply a difference in duration; the causes, the symptoms, the consequences, and the treatment, of one and the other, are similar. I prefer, therefore, to include both varieties in a single description, merely wishing you to understand, that while the one passes through its period in some weeks or months, the other may exist for years.

The disease is more common during childhood than in after life; it may affect any bone, but most commonly attacks those whose texture is spongy; those of the carpus, the tarsus, the spine, and the articular extremities of long bones.

Causes.—The causes of this disease are numerous. They may be local or general. Among the local external causes are contusions, wounds, fractures, pressure. Among the local internal causes are periostitis, purulent collections in the neighbourhood of joints. Among the general causes are, it is said, scrofula, scorbutus, syphilis, rheumatism, and gout. With respect to syphilis, it is proper to state, that some pathologists attribute the affection of the bone to the use of mercury; others, to a combination of syphilis and mercury. The difficulty which attends our endeavours to estimate this joint cause is, that most persons suffering from syphilis take mercury; and that the cases in which syphilis, left to itself, affects the bone are very rare. Rheumatism again seems first to attack the fibrous tissue which invests the bone, and is from thence propagated to the bone itself; therefore it is, I apprehend, that rheumatic caries is generally superficial.

Symptoms.—When the affected bone is superficial, the symptoms are very conclusive; there is tumefaction, sometimes limited to a part, sometimes extending to the whole bone: this tumefaction is usually preceded and accompanied by a sense of weight, and an obtuse pain, which is particularly felt whenever the limb is shaken. If the affection be syphilitic, the pains are acute, deep seated, seeming to occupy the centre of the bone, more severe by night than by day, and commonly depriving the patient of sleep. When the inflammation is owing to other causes, the pains are rarely severe, before those tissues which adhere to the bone are affected. When the affected bone is accessible to the touch, the tumefaction is easily distinguished and appreciated; but when it is deep-seated, this symptom is either wanting or difficult to appreciate; and it is only by the weight, general tumefaction, and the deep heavy pains which are felt, that we can recognize the disease; and even then they may be confounded with the symptoms of peri-

ostitis. The extreme hardness of tumors formed by inflammation of bone, and the slow progress it makes, are not always sufficient to distinguish it from chronic periostitis.

Some persons have denied that tumefaction of the spongy extremities of bone can occur; but there are specimens to prove that it really can happen. Under the influence of syphilis, the diaphysis suffers; but these extremities suffer where scrofula is the exciting cause.

Sometimes it terminates in resolution or ulceration, suppuration or necrosis; sometimes it ends in a kind of induration, which has been termed ivory exostosis.

Anatomical characters.—It is less easy than is commonly thought to determine the anatomical characters of osteitis, and to distinguish them from caries or tuberculous infiltration. The dilatation of the cells of the spongy tissue, the separation of the laminae of the compact tissue, are the most constant and best established changes of structure in osteitis. Another common change is a modification in the consistency of the bone; it becomes more fragile or softer; it may, however, become harder and more resistant. The change of colour is important: when inflammation has extended from the circumference to the centre, a brownish red spot appears on the surface, and the periosteum at this point is irritated and thickened. As the inflammation extends in depth, tumefaction increases, the cells and laminae are dilated, and the vascular system is developed. Between the laminae, and in the cells, a reddish or greyish-brown sanious fluid is seen, and caries or abscess is then impending; in the latter case the pain is very distressing, and the sympathetic re-action very great: this is principally owing to the pus being secreted in a part where the tissues have very little disposition to expand.

Treatment.—The treatment of osteitis is rarely simple, because the cause is rarely so. Syphilis, scorbutus, scrofula, rheumatism, and gout, must be treated appropriately; local remedies alone will not subdue the disease produced by these causes; neither will the general treatment always suffice. The local treatment will be directed against the inflammatory action and the pain. Leeches applied again and again, with intervals of two or three days, are often useful, associated with emollients; they may be followed by blisters, by iodine, by mercurial inunctions, and even issues; but, in using the latter, they must not be applied too near the diseased point, or they may aggravate the evil.

ABSCESS.

Deep-seated inflammation of bone may end in abscess, an affection of great severity,

which, from the time of David to that of Brodie, has been completely overlooked. In 1764, David's Memoir, on the mode of opening abscesses in different parts of the body, was crowned, with a double prize, by the Ancient Academy of Surgery. In speaking of abscess of bone, he says, "Bones are susceptible of inflammation and of tumor in their substance; these tumors may end in a species of suppuration which is proper to bones. If the swelling proceed very slowly, the pain will not be very severe; but if it be less slow, the pain will be very severe; the heat at the part will increase, and, in the proper substance of the bone, a kind of suppuration takes place, which may take an outward or inward course, towards the medullary membrane or the periosteum. It is very difficult (desirable as it is to open them early) to determine their existence, especially when there is no perceptible external tumor. The symptoms upon which we must rely are a heavy pain in the bone, confined to one spot, and becoming more and more severe; over the point there is a doughy or œdematous sensation; soon the pain becomes severe and gnawing, accompanied by sleeplessness, irregular rigors, fever, &c. Abscess, formed in the substance of bone, is one of the cases in which a speedy opening is necessary to prevent serious consequences. It must be done by applying a crown of a trepan over the abscess, provided the bone presents a sufficiently large surface for the purpose, as the tibia. If the surface be too small, a strong forceps or other instrument may be available to procure the escape of the pus." Nothing can be clearer than this description; and yet, strange to say, surgical works published since his time do not at all allude to it. The sagacity of Sir B. Brodie in this, as in many other diseases, enabled him, (unaware of David's description), to discover this affection, and to lay down clear and decisive rules as applicable to its treatment.

AQUO-CAPSULITIS,

WITH HYPOPION AND ULCER OF CORNEA.

To the Editor of the Medical Gazette.

SIR,

I SHOULD feel obliged by your finding a place for the following observations on aquo-capsulitis, with hypopion and ulcer of cornea, in your valuable columns.—I am, sir,

Your obedient servant,

EDWARD HOCKEN.

Exeter, May 20th, 1840.

Aquo-capsulitis, with hypopion and ulcer, is a form of disease which not unfrequently presents itself at the West of England Eye Infirmary, as a consequence of injuries of the cornea, produced by the impingement of angular pieces of flint or stone, projected with violence by the blow of the hammer in stone breaking. As I have nowhere seen aquo-capsulitis thus produced, mentioned in any of the written accounts of authors on the subject, much less as the most frequent cause, I have necessarily come to the conclusion that such cases are peculiar to the situation mentioned, where they infinitely preponderate over the idiopathic forms.

The symptoms have almost invariably reached the conditions already mentioned, before the case is seen: namely, the formation of hypopion, and a deep extending ulcer of the cornea. The incipient symptoms of the inflammation quickly succeed to the immediate effects of the blow—the pain and hyperæmia: the eye becomes painful, intolerant of light, and profuse lachrymation is induced by examination. A pinkish zone is developed around the cornea, reaching to its edge, a condition which exists in all corneal affections, depending on inflammatory congestion of its own vessels, as distinct from the anterior ciliary. Ulceration commences and progresses in the injured point of the cornea, whilst the conjunctiva inflames, and is finally elevated over the corneal edge by subconjunctival effusion, constituting chemosis. At this stage the patient complains of pain in the globe, of a tensive, lancinating character, increased in paroxysms; some cephalalgia, occasionally dull, but oftener shooting; pain over the brow, especially towards night. The constitutional symptoms are more or less general indisposition, a hard frequent pulse, when the individual is plethoric, or, if the contrary, small, easily accelerated, with apparent power (irritable), but readily compressible; hot skin, thirst, and disturbance of the digestive and excreting organs. This is the usual progress and order of succession of the primary morbid signs, when an opportunity is afforded of tracing their development and existence; but, as before remarked, they have in general already reached this stage before the patient applies for relief. When now examined, the inner surface of the cornea—the aqueous membrane—

is dull and cloudy; usually uniformly so, but occasionally aggravated here and there into spots or rings. There is seen, at the most depending situation, more or less of that morbid secretion constituting hypopion; a deep extending ulcer in the cornea, and the conjunctiva of the globe and lids scarlet, from distended vessels, and elevated around the cornea by chemosis. The pain, the intolerance of light, and lachrymation, and the constitutional symptoms, are as already described. Not unfrequently, the iris is somewhat changed in colour, denoting the complication of the membrane covering its anterior surface, but this rarely to a degree so as to be easily distinguished through the cloudy capsule.

As these cases occur in labouring men, usually plethoric and healthy, they almost invariably demand the active employment of antiphlogistic means, with calomel and opium; under which treatment the generality recover, with complete restoration of vision, unless the unavoidable leucoma which results from the cicatrization of the ulcer immediately cover the pupil.

Idiopathic aquo-capsulitis is undoubtedly most common in early life; but estimating the average from all cases admitted at the West of England Eye Infirmary, their occurrence in the adult preponderates. When occurring in children, they usually present more or less evident marks of a strumous diathesis, and in some cases to so great a degree, and so greatly modify the duration and symptoms, as to have received a separate consideration, under the head of "strumous aquo-membranitis."

As regards the secretion from the inflamed membrane, under all circumstances the aqueous humour is increased, rendering the cornea preternaturally convex, and causing the painful sensation of tension. But, we may inquire, is it the usual termination (result) of such inflammation, to produce that morbid secretion denominated hypopion? Our answer must undoubtedly be certainly, yes; and this quite independent of iritic complication. The usual result of aquo-capsulitis is the production of hypopion, unless the process be previously stopped by active and appropriate treatment; although I am aware that Mr. Middlemore thinks differently on this point. In his excellent description of the affection, he states that such a termination is

rare; and that the occurrence alluded to by Mr. Lawrence (namely, the formation of hypopion) can only be considered as the termination of inflammation of the membrane of the aqueous humour, by admitting that the extension of inflammatory action to the proper iritic substance by which hypopion is produced, may be properly represented as the termination of that inflammation which originally led to the affection of the true iritic structure (Treatise on Dis. of the Eye, vol. i. p. 587.)

The effused matter renders the aqueous humour itself opaque, as is the case in inflammatory effusions from serous membranes. But what is the nature of the effused fluid — what that of the aqueous capsule itself?

That the effusion is not ordinary pus, is evident, although a globular fluid which gravitates to the most depending position, changing its situation according to the situation of the eye, as nothing escapes by an incision through the cornea; nor does it present, when removed, any resemblance in its physical characters to that fluid. Is the secretion lymph? If so, it deviates materially from the usual changes occurring in that effusion under ordinary circumstances. When lymph is thrown out from an inflamed serous membrane, it is so in a fluid state, together with an increased quantity of its own specific secretion; coagulation of the liquid fibrin (lymph) succeeds, part rendering the serum turbid, the rest adhering to by deposition the originating inflamed surface, either as a layer, or in more or less irregular patches or spots, finally becoming organized, and assuming the character of cellular tissue, or as a rigid investing membrane. Part of the changes occur in aquo-capsulitis; the humour is rendered turbid, a few opaque spots may or may not appear on the inner surface of the membrane; but the greater part falls to the bottom as a dense granular fluid, having no disposition to become organized, and possessing physical characters distinct both from lymph and pus; it is, therefore, a fluid secretion *sui generis*.

The aqueous membrane itself is not a common serous tunic, although in early life it doubtless formed a shut sac. Its texture is hard and cartilaginous, extremely elastic, and curls up when removed, exactly similar to the crystalline capsule, which it resembles in every

point: its resemblance to a serous sac consists only, then, as to its original form, and in its normal secretion.

THE INFLUENCE OF WOOLLEN MANUFACTURES ON HEALTH.

By J. B. THOMSON, Surgeon,
Tillicoultry.

[For the London Medical Gazette.]

THE extreme healthfulness enjoyed in woollen factories has probably not attracted that attention from the public or the profession which it deserves. During a residence of several years in a district where the population is much employed in woollen manufactories, no fact connected with our medical topography has impressed me more than the thriving appearance and great exemption from disease peculiar to the children in these mills. So remarkable is this fact that it has become quite proverbial, and puny and weakly children in a few weeks after entering these factories exhibit the most marked improvement in physical appearance. In Yorkshire, I am informed on the best authority that the same opinion prevails, and even the better classes have been known to send the delicate members of their families to the woollen factories for the benefit of their health, and the effect has been to give new stamina to the system. The salutary nature of this occupation has been with much plausibility referred by the working classes themselves to the impregnation of the body in some way or other with the oils among which they are constantly employed: that this manifest health should continue in spite of the confinement so many hours a-day from the open air and free exercise during the growing period of youth, makes the matter still more striking; and although according to the Factory Act, the children work the same number of hours as those in the cotton trade, these sleek-haired, rosy-cheeked boys and girls, form quite a contrast to the puny creatures of the cotton factories, sicklied o'er, as they too often are, with the pale cast of disease and premature decay.

I am disposed to impute the healthfulness of the woollen manufacturers to the quantity of oils they are constantly using, and this is the popular opinion on the subject. When we enter these mills we find the boys and girls appearing

literally as if they had been dipped in oil; and hence the well-merited epithet of Burns, the "*creeshie nations*," belongs especially to these children.

The application of oleaginous substances to the surface of the human body, both as a prophylactic and pharmaceutical agent, has been long in use, and seems to have been known and valued by the earliest practitioners of the healing art. In the present day, as a local remedy, oil is highly esteemed for medicinal purposes; but, we believe, as a general means of procuring and preserving health, it deserves greater attention than it has yet received. Here is the testimony of the illustrious Bacon to its efficacy: "*Ante omnia igitur usum olei vel olivarum vel amygdali dulcis, ad cutem ab extra unguendum ad longevitatem conducere, existimamus.*" In proof of this opinion being sound, we are told by travellers that in eastern countries wonderful effects are seen to follow the use of oils applied externally; and we know that those employed in the olive oil factories, and that oilmen, fishermen, tallow-chandlers, tanners, butchers, and others occupied among greasy substances, are singularly free from the influence of epidemic diseases, and have even resisted the virus of plague when all around has been laid waste by its ravages.

In the periodicals of the day, occasional cases of supposed phthisis and atrophy have been stated to be cured by inunction with lard and oil. The healthful appearance of the children in woollen factories seems to add to the amount of evidence, that oils, applied to the surface of the body, are exceedingly useful for invigorating the system, and ought to lead to their more general application.

As to the *rationale* of the process by which healthy action is induced by oils and unguents, is it not probable that absorption through the skin is one of the adjuvants? Probably, also, the exhalants are relaxed, and free perspiration is promoted. The constant oiliness of the skin would naturally lead us to think the oil must be absorbed; and modern physiologists have given us abundant proof that absorption of fluids may go on to a large extent from the cutaneous surface even when unabraded. May not oil be absorbed by the surface as well as other fluids, and in this way add to the health of those whose bodies are much exposed to it in their daily occupations?

There is nothing in the mere climate or other peculiarities of this locality sufficient to account for the phenomena alluded to; for the average annual amount of disease and of mortality is great among the population generally, and we are visited with most of the diseases which "flesh is heir to," and epidemics frequently spread dismay and desolation among our villages. It may be said, that there is a native constitutional vigour to which the appearance of the factory children may be traced; but this is answered by the observation, that even weak and puny children rapidly improve when sent to the factory. Neither can their health arise from the improved diet or clothing which their wages enable them to procure; for their clothing is very mean, and there is scarcely such a thing anywhere in this thriving district as poverty so great as to make the health suffer from bad diet or deficient clothing. From all these considerations I conclude there is something in the woollen manufactures themselves that has a specific influence upon the health of those employed in them, and especially marked in the *children*, who are most engaged in working among the oil.

When alluding to the exemption from disease which seems to belong to workers among woollen, I cannot help adding a sentence by way of *per contra*. I have never seen anywhere so many cases of the itch as among these woollen mills. But this might surely be obviated by cleanliness. These observations are intended to call forth the experience of other members of the profession, who have, on a larger scale, opportunities of marking the effect of the woollen trade upon health.

ON DIVIDING THE INTERNAL RECTUS MUSCLE

FOR THE CURE OF STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

I BEG to forward you an additional case to those of Dieffenbach and others, illustrative of the utility of dividing the internal-rectus muscle of the eye for the cure of strabismus, an operation giving results as beautiful as they are desirable.

Your obedient servant,

EDWD. J. SCOTT, M.D., M.R.C.S.L.

Surgeon to the Portsmouth General Dispensary.
Portsea, May 6, 1840.

Sarah French, aged 16, has had a squint of the right eye since she was two years old, which was attributed by the mother to a fright the girl received at that period; the eye is turned so much inwards, that but little of the cornea is visible when she takes a direct view.

On Monday, April 27th, I performed the operation in the following manner, being assisted by my friend Mr. Henderson, surgeon of this dock-yard, and by my pupil Mr. Huish:—A cloth was passed round the girl's arms and body, and secured behind the chair in which she was seated: her head was placed against the breast of one assistant, who raised the upper lid of the eye; a hook was passed through the conjunctiva about three lines from the cornea on the inner side, by which the eye was everted. The conjunctiva was now divided about a line internal to the hook: this was followed by a few drops of blood, which were cleared away by a wet dossil of lint, and a bent probe (as employed by my friend Mr. Lucas,) was introduced and easily passed under the tendon of the rectus; this, exposed to view by gentle traction, was divided by curved scissors, and the eye gradually assumed its normal position. Lint, moistened with cold water, was applied, and she was ordered to take a dose of Epsom salts.

28th.—There is slight chemosis of the conjunctiva, but she has been perfectly free from pain; the wet lint was discontinued, and a shade applied over the eye.

May 1st.—She walks about the house without any protection to the eye, which is looking well and straight; the chemosis is fading.

5th.—The chemosis is now nearly disappeared, and the squinting apparently cured; she pursues her ordinary occupations, and says she felt so little pain from the operation that, if the other eye squinted, she would not hesitate at its being repeated.

REMARKS.—The mode of operating in this case may be observed to be very similar to that adopted by Mr. Lucas in the cases which he has recently published. I perfectly agree with him that it is important to lessen the number of hooks as used by Dieffenbach: a probe or a fine blunt hook bent at an obtuse angle gives great facility in discovering and bringing forwards the tendon, expediting and rendering more certain the entire division of it.

There is one curious circumstance in the case I have just related, that although since the operation the axes of the eyes correspond in all their movements, yet, when the originally sound eye is shut, and the girl is directed to look at an object with the other, the external edge of the cornea reaches the outer angle of the eye, giving the appearance as if she were regarding something away, though she has a distinct view of the object directly before her.

ERGOT OF RYE.

To the Editor of the Medical Gazette.

SIR,

I PERCEIVE, from the last number of the GAZETTE, that you are inclined to adopt the opinion of the late gifted Dr. Hamilton, respecting the ergot of rye—that it “can act in no other way than by influencing the imagination, and that it possesses no superiority in this respect over any other medicine.”

Now I have so very generally observed an increased action of the uterus follow the exhibition of the ergot, that I expect such an effect to be produced by it, as much as I should expect sleep by an appropriate dose of laudanum; and it really appears to me adapted to supersede the necessity for the application of the short forceps, in many cases, where the head rests on the perineum, and the external parts are well dilated, but the unaided efforts of the uterus are insufficient to occasion expulsion. I find, indeed, on inquiry among my medical friends, who are engaged in extensive obstetric practice, that they are well satisfied of the efficacy of the medicine. I have myself in a few instances given it, with seemingly marked effect, when the patient did not know whether it was intended to diminish or increase uterine action; and, consequently, I am at a loss to account for its utility in these cases, on the principle of its influencing the imagination.

I am well aware that generally, and in medicine especially, it is very difficult to trace effects to their proper causes; but, in proportion to the number of cases, I have as frequently found action of the uterus follow the employment of ergot of rye, as I have an increased flow of urine succeed the use of squills, or bilious dejections the use of calomel. It

may be objected, that the specific action of the squills is upon the secretion, while that of the ergot is upon the muscular structure of an organ; but still the analogy appears to me sufficiently perfect for the illustration of the present subject. We find, moreover, the involuntary action of particular muscles occasionally induced, as in ordinary cramp, by irregularities in diet, and other causes.

If, however, you, or any of your numerous readers, more competent than myself, would be kind enough to enter into this subject a little more at large, or inform me, through the medium of your valuable periodical, what medicinal preparation has been found of equal power and advantage with the ergot of rye, in exciting action of the uterus in parturition, I shall feel much obliged.

I am, sir,

Your obedient servant,

T. C. BUCHANAN.

Gloucester, June 4, 1840.

RUPTURE OF THE HEART.

To the Editor of the Medical Gazette.

SIR,

I SHOULD feel obliged by your allowing the following case of rupture of the heart to be recorded in the pages of your journal.—I remain, sir,

Your obedient servant,

J. D. JEFFERY.

Sidmouth, June 1st, 1840.

May 20th, 1840.—By direction of the coroner, I examined the body of Chichester Meddett, æt. 28, about 5 feet 8 inches in height, stout made, sallow complexion. He was found dead under the cliffs, having fallen from a height of about 100 feet, whilst being drawn up with some kegs of spirits, in the act of smuggling. There were a few slight bruises about the body. No penetrating wound, or fracture of bone, that could be discovered. On opening the chest, the pericardial sac was found to be distended with dark fluid blood, which proceeded from a ragged transverse opening, more than large enough to admit the middle finger, in the anterior portion of the right auricle. The heart did not seem to be softened in texture, nor did I discover any symptoms of ossification. I have been informed by his friends that the man enjoyed very good health.

OBSERVATIONS. — I am aware that there is not much of practical interest connected with this case; but rupture of the heart, under any circumstances, is a rare occurrence, and rupture of the right auricle still more so; and I think that every rare accident, as well as every irregularity and anomaly of structure, met with by individuals, should be recorded, for the benefit of the whole profession, and of science.

CASES OF STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

PERMIT me to forward you a few more cases of strabismus, cured upon the method of Dieffenbach, an early insertion of which will greatly oblige, sir,

Your obedient servant,

A. FRANZ, M.D.

19, Golden Square, May 26th, 1840.*

CASE IV.—Arthur M'D—, aged 18, a healthy robust person, who had been affected with squinting since his third year, for which his mother could assign no satisfactory cause, subjected himself to the operation on May 11th, in order to be freed from the deformity. On examination, the right eye was found to be inverted to such an extent, that the inner canthus concealed more than a quarter of the cornea, when the organ was left in its usual position. When the sound eye was closed, he could, with some effort, direct the affected eye so as to look straight before him, but could not turn it in the slightest degree outwards. He could farther only distinguish large objects, and could not read even the largest print. The operation was performed, as already described in the first case, which appeared in the *MEDICAL GAZETTE* on April the 17th. The hæmorrhage was inconsiderable; the edges of the wound in the conjunctiva were brought in apposition by means of a probe. After the operation the eye was found to be slightly everted, its motions being free, except internally. Cold water applications were ordered; a powder, containing Hyd. Chlor. gr. iv., Pulv. Jalap. gr. x., to be taken at night, followed by an opening draught in the morning.

* This paper was accidentally mislaid. It ought to have appeared a fortnight ago.—*ED. GAZ.*

May 12th.—The patient had slept well, and suffered no pain; the medicines had operated freely. No inflammation was present in the eye, only a slight increased vascularity in the neighbourhood of the wound. The pupil was yet directed a little outwards, but on the following day it occupied the proper position.

CASE V.—Mary M'D—, aged 16, the sister of the former patient, also a healthy person, who had contracted this deformity, by imitative instinct, in her third year, desired the operation for the same reason as her brother. The left eye was considerably turned inwards, nearly a quarter of the cornea being bidden by the inner angle. On closing the sound eye, she could evert the affected somewhat beyond the orbital axis towards the outer corner, but could only read large print. The operation was performed on the same day as above, and the hæmorrhage was also very trifling. After the operation the eye was slightly turned outwards; its motions were perfectly free, and sufficed to bring the edges of the wound in the conjunctiva in contact. The same orders for the after treatment were given.

May 12th.—The patient was doing well; the eye presented similar appearances as that of her brother, except that in this case the pupil already occupied its proper position.

Both these patients have gone on favourably since, and were allowed to return home into the country on the tenth day after the operation, when the wound in the conjunctiva had perfectly healed, and no signs of the operation, beyond some redness of the conjunctiva in the inner angle of the eye, could be detected. The motions of the eye, moreover, were perfectly free; not the slightest inversion could be observed, and both eyes acted harmoniously.

CASE VI.—William Nicholson, aged 18, a young man in the full enjoyment of health, had squinted since his fourth year, after suffering from small-pox. The left was turned slightly upwards and inwards, so that one-fourth of the cornea was covered by the nasal canthus. When he closed the right eye he could distinguish large objects, but could not read any print. He possessed, however, the power of turning the eye outwards, a little beyond the orbital axis. The operation was performed on the 14th of May, in the same man-

ner as on the other cases; but the hæmorrhage was more considerable, although not of sufficient extent to impede the progress of the operation. The eye was now in a slight degree everted, its movements being free, except internally. The edges of the wound in the conjunctiva were brought into juxta-position by means of a probe, and the patient dismissed, with the same injunctions as regards the after treatment.

May 15th.—No inflammation was present. The motions of the eye were free. The pupil occupied its proper position. As the outer edge of the wound in the conjunctiva had retracted from the inner, and presented the appearance of being somewhat thickened in texture, and was also a little prolapsed between the tarsal margins of the lids when the eye was closed, this portion of the conjunctiva was removed with a pair of curved scissors, a proceeding which caused neither pain nor bleeding.

20th.—The wound had perfectly healed, and a slight irregularity of surface and an increased vascularity were only observable on the conjunctiva of the inner angle.

26th.—The irregularity of surface of the conjunctiva, which was still reddened in the inner canthus, had nearly disappeared, the motions of the eye were perfectly free, the pupil occupied a proper position, and both eyes moved harmoniously.

CASE VII.—Susan Ridgow, aged 22, a girl of plethoric habit of body, with large light eyes, had squinted since her fifth year, after having suffered from measles. The right eye was inverted, so that one-fourth of the cornea was hidden by the inner angle. On closing the left eye she could not read large print, but could move the affected eye externally somewhat beyond the orbital axis. The same operation was performed on the 20th of May, in which she materially assisted by her determination and courage, so that a wound of not more than four lines in length sufficed to bring the muscle into view, which was readily divided. There were but a few drops of blood lost in this case. The movements of the ball were free, and brought the edges of the wound in the conjunctiva in contact. After the operation the eye was considerably everted. The same directions were given for the after treatment.

May 21st.—The patient was doing well, did not complain of pain; only a slight redness of the conjunctiva in the immediate vicinity of the wound was to be observed; the motions of the eye were free, the pupil being still everted, and did not assume its proper place in the centre of the orbit until the third day after the operation.

26th.—The wound had perfectly healed. The pupil continued in a right position. Both eyes acted freely and in perfect unison.

I take this opportunity of making my public acknowledgments to several of my medical friends who have been of assistance to me in bringing forward this operation, and especially to Dr. T. Hodgkin, who kindly afforded me the opportunity of presenting several of my cases to the Harveian Society on May 16, the members of which were perfectly satisfied with the success of this new operation.

COLLEGE OF SURGEONS.

HUNTERIAN MUSEUM.

To the Editor of the Medical Gazette.

SIR,

THE perusal of a remarkable review, in your last week's columns, of Mr. Owen's *Odontography*, has induced me to trouble you with a few observations on a subject which is of vital importance to the profession, and most intimately connected with the progress of medical science in this country. To your criticism it is not my intention further to allude; indeed, it does not require any comment; the facts it reveals speak for themselves, and it is best to leave them to make their due impression upon the minds of all friends of truth and justice, without any further remark: but I deem it right to call your attention to some glaring facts respecting the state of the national museum, of which Mr. Owen is one of the conservators, and from whence the materials of Mr. Owen's work seem to be drawn. A short time ago, being engaged in a course of investigations of great interest to myself, and, I venture to hope, of some importance and value to science, I required to consult and examine many of the series of preparations contained in

the Hunterian museum. Residing at a distance from London, I could not attend there myself, and I therefore availed myself of the assistance of an intelligent professional friend, whom I requested to procure information on certain topics which I communicated to him. He went accordingly to the museum, and wrote to me, on returning to his own house, the same evening, the following note, containing the result of his labours for the day.

“London, 1839.

“My dear Sir,—From the regulations of the Council of the College, or of its servants, I had a very imperfect sight of the preparations, contained, as they were, in cases which only allowed of the display of a few of them, the majority being contained in drawers inaccessible to strangers, as I understood from the officers of the establishment; and of those that were exposed, the majority had no names affixed, and so were of no use to me. Upon inquiring for a catalogue, I was told they were preparing one, and that the catalogue which Hunter had made was not allowed to be shewn. Thus you will not wonder I left as wise as when I entered, but I trust not to do so when next I visit the museum. In the meantime, believe me, your very obedient servant,

“—————*”

My disappointment and surprise on receiving this note were considerable, for I was well acquainted with the zeal which the Council of the College have shewn of late years in their endeavours to render the treasures of our national institution, over which they so ably preside, available and useful to all the members of the profession—to throw them open, as it were, as much as possible, to all students and scientific inquirers; and I was also not ignorant of the reputation of the conservators for ability and industry. Anxious to discover the real state of affairs in the museum, with a view to ascertain what materials might be at my command, I instantly set about making inquiries on the subject in well-informed quarters, and soon found that the state of the case is as follows:—

The first four volumes of the catalogue of the museum were published four or

five years ago; that is, before the completion of the present building. Since that time one additional volume only has appeared, and consequently a great part of the specimens in the physiological gallery remain undescribed. In the gallery of the zoological series, most of the preparations are not even properly numbered. What is still more important, there is no description of the great mass of pathological specimens. Now the Hunterian museum is professedly a pathological one, all its other departments being accessory; that these are necessary I am well aware, and also that they are highly interesting to the accomplished professional student; but in practical importance it must at once be confessed that they are altogether secondary to those pathological stores from which we are to derive the information necessary for our daily practice. Though this is undeniably the case, it is, nevertheless, a fact, that the collection of pathological preparations, including, besides Hunter's specimens, several hundreds of others of a high value, purchased by, or given to, the College of late years, has for *its catalogue only the few pages left by Hunter himself*; and, therefore, there exists no efficient arrangement of it, which can be of any assistance to the student. Besides, of numbers of preparations in the body of the museum, no notice whatever is extant. There is no published description of the magnificent fossil specimens, but merely a scrap of inaccessible manuscript; and of the numerous and highly valuable calculi there is no description whatever. Hearing that the microscope had arrived at great perfection, and that much had been done with it by one of our conservators, in the investigation of osseous tissues, and that specimens of these had been used to illustrate lectures in the College, and had created some curious discussions in geology, I felt desirous to see the preparations, and when in town I inquired for them, but they were not forthcoming. The departments of the museum just mentioned are therefore a sealed book to the profession at large, and cannot be rendered practically available, for any purpose whatever, by any individual except the conservators themselves. Those who are anxiously waiting to study the subjects connected with them must make up their minds to wait on for an indefinite period; and were I, for instance, to

* Our correspondent has sent us the original of this letter, as well as authenticating his own.—
ED. GAZ.

desire to study the subjects, the descriptions of which are contained in the work you last week reviewed, by an examination of the specimens from which the author has drawn them, the wish would be vain. I am well aware that, if it should be inquired what have been the results of the labours of the two intelligent conservators, since the publication of the fourth volume of the museum catalogue, there would be no difficulty in finding an answer to that question, which, as far as Mr. Owen is concerned, would be highly creditable to the industry and talents of that gentleman: the scientific world are well acquainted with his labours; he has annually delivered twenty-four lectures to the members of the College as their Hunterian lecturer, and has been the author of innumerable papers, read at the Royal, Geological, Zoological, Linnean, and Microscopic Societies; he has made lengthy communications to the British and Foreign Associations for the Advancement of Science; he has furnished contributions to the French Institute; has been the author of numerous articles in the Cyclopædia of Anatomy, in Darwin's Journal, and other similar publications; and last, but not least, as I learn from the last No. of your journal, has given to the world his "Odontography"; all of which labours have doubtless contributed to the promotion of science, and have greatly redounded to his own fame; but they have tended, in a very subordinate degree, to benefit the science of surgery, and fulfil the desires of the profession with regard to their conservator. We thus see that one of the gentlemen whom the Council of the College have appointed conservators of the museum, is remarkable for industry and varied activity, yet unfortunately these qualities, from some cause or other, have hitherto been of but very little service to the institution of which he is a salaried officer. I am sure that the just complaints of a member of the College, which moreover are not those of an individual merely, but have been loudly raised in several quarters, will not be disregarded by the liberal and enlightened heads of our profession, upon whom devolves the important duty of regulating its institutions and guarding its scientific treasures; and in a spirit of deference and sincere respect, I will also venture to offer a suggestion

towards the removal of the evils of which I have complained. Would it not be desirable to make such an addition to Mr. Owen's salary as would render him independent of the laborious speculations in which he is engaged, and as would secure the devotion of the energies and great experience of such a valuable servant to the duties of his office, from the non-fulfilment of which the profession at large is suffering; whilst he is engaged in other pursuits. Certain I am, that had he bestowed half the zeal and activity on the various parts of the Museum Catalogue that he has displayed in his private works enumerated above, the complaints which the deficiencies in the catalogues and general arrangement of the museum have naturally produced, would never have been heard of.

Your obedient servant,

M. R. C. S.

June 6th, 1840.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abrégé."—D'ALEMBERT.

Practical Observations on Abortion.

By J. S. STREETER, M.R.C.S., President of the Westminster Medical Society, &c. With Plates and Woodcuts. London: 1840. 8vo. pp. x. and 70.

THIS work is divided into five chapters. The first contains general observations; the second is on the structure of the ovum; the third discusses the nature, symptoms, and causes of abortion; the fourth is on the treatment of abortion; and the fifth on the "prevention of abortion in any future pregnancy."

Our author remarks, in the third chapter, that the causes of abortion, however numerous, may all be resolved into three great classes:—

"1st, An imperfect or abnormal formation of the ovum. This may take place either in the fœtus or its membranes, or in the decidua and placenta, those structures which fasten the ovum to the uterus, and finally connect the embryonic and the maternal systems.

"2dly, Morbid states, functional or organic, of the uterus and its appendages.

"3dly, Morbid states generally of the constitution of the mother." (p. 33.)

This division is a very good one; and we will just add, as a commentary upon the first class, an observation of Jörg, in his *Kinderkrankheiten*; namely, that morbid states of the ovum may owe their origin to disease of the father. If this is a frequent cause, it must often nullify the best concerted measures of the accoucheur to prevent abortion in a future pregnancy. The following extract from the chapter on treatment shows the prudence learned by experience; indeed, the whole book is the work of a man who is thoroughly in earnest with his profession; and studies its theory with zeal, that he may become more efficient in its practice.

"When called to attend a female, who, from any unpleasant occurrence, or from any premonitory sensations, is for the first time apprehensive of miscarriage, the accoucheur should first ascertain whether either of the essential symptoms of abortion, uterine pain, or hæmorrhage, is present. If the essential symptoms are not present, he should then carefully investigate the state of his patient, and whenever he finds any thing constitutionally or locally amiss, treat her precisely as he would if she were not pregnant. Where there is general plethora, or inflammation of any important organ, as of the brain, the lungs, &c. he must not abstain from the more active antiphlogistic remedies. Bleeding, indeed, if not excessive, is usually borne well by pregnant females, and the whole of the treatment should be so chosen as not only not to excite, but should be combined with such remedies as will allay irritation of the uterine. Active emetics, stimulating diuretics, and drastic purgatives, especially the aloetic, should be avoided, and the bowels cleared out and kept soluble by the milder laxatives or simple clysters. Some interval should elapse between the doses of purgatives; for these medicines, when too quickly repeated, are very apt to bring on expulsive action of the uterine. A full opiate may commonly be prescribed with advantage after the purgative action has been secured, and especially at bed-time. Cohabitation should be strictly forbidden, and as carefully abstained from during the whole period of convalescence.

"When uterine pain has commenced, the use of a full opiate, and especially of its repetition at bed-time for several successive nights, in preventing prema-

ture labour and miscarriage in the latter months of gestation, is fully established; but the propriety of employing it in the earlier weeks and months is very questionable. There are undoubtedly a very few cases in which its use would be serviceable, but far more commonly its exhibition fails to produce the effect desired, the prevention of miscarriage, and then it leads to injurious consequences; so that I now seldom employ opiates in any case where abortion is threatened *before* the third month of pregnancy is completed. When, however, in addition to uterine pain, these early cases are attended with any hæmorrhage, I lay it down as a canon of treatment that the practitioner ought not to employ opium, or any drug that has the property of suspending or lessening uterine contraction. The results of inquiries show that miscarriage in almost all instances arises from causes over which, when its *essential symptoms* have set in, the accoucheur has lost all control. Fœtal or uterine disease or imperfection has accomplished its work of destruction, and the blighted embryonic thing must now be cast out from the womb. If the ovum is not so blighted, rest in the recumbent or horizontal position, mental quietude, the abstaining from stimulating articles of food, the cleaning out of the bowels by a simple enema or mild purgative, the administration of common salines, such as the citrate of potass with small doses of digitalis and hyoscyamus, will suffice to allay the symptoms. When, however, the ovum is blighted, it must necessarily be thrown off by miscarriage, and the suspending the uterine pains by the administration of opium only retards, and in too many instances disarranges, that process altogether. If, therefore, hæmorrhage continues or recurs after a few hours' trial of the above means, it seems to me that it then becomes a duty to ascertain by vaginal examination whether the os uteri has begun to dilate or not. If dilatation of this part has commenced, or if the hæmorrhage steadily increases, even before it becomes profuse or tells upon the constitution, the ergot of rye should be freely and fearlessly employed in larger or smaller doses, and given at longer or shorter intervals according to the effects which it produces. The accoucheur should, from time to time, as gently as possible, ascertain the extent of dilatation of the os uteri, re-

move all clots from the vagina, and dislodge the ovum if, as sometimes happens, it is merely adhering to the os uteri, and keeping up hæmorrhage by the irritation which it occasions there. He should keep the room of a moderate temperature, give cool or positively cold drinks, and mild nonstimulating articles of food. If the tone of the muscular symptom is failing from syncope, he should order port-wine negus, or brandy and ammonia, sufficient to restore and sustain it.

Should the symptoms become alarming notwithstanding a steady perseverance in these measures, or have already become so from peculiarity of constitution, or the extent of the hæmorrhage before assistance was sought for, the practitioner must sit down at the bedside; he must trust nothing to attendants and friends, but devote a few hours to the recovery of his patient. He, indeed, that would treat uterine hæmorrhage successfully, must have reduced the means of treatment to general principles. These means of treatment should be methodized and duly subordinated, like those which the surgeon calls in aid for arresting hæmorrhage from a wounded artery. As the thumb of the surgeon now almost instinctively tourniquets the subclavian or femoral artery in bleeding from a limb, so should the hand of the accoucheur seek to compress, where it is possible, the abdominal aorta against the spine. Pressure there will certainly restrain the uterine gush for the time, and we are assured on good authority that it often commands the hæmorrhage entirely." (pp. 47-52.)

We recommend Mr. Streeter's treatise, as the production of a sensible and judicious practitioner.

Hippopathology; a Systematic Treatise on the Disorders and Lamenesses of the Horse, with their modern and most approved methods of Cure, &c. By WILLIAM PERCIVALL, M.R.C.S. Licentiate of the Company of Apothecaries, Veterinary Surgeon in the First Life Guards, &c. Vol. II. Part I. London, 1840. 8vo. pp. 170.

THE first volume of this excellent work appeared in 1834. The part now before us is dedicated to the diseases of the air-passages, lungs, and heart of the horse; comprising, among other maladies, catarrh, bronchitis, laryngitis, nasal gleet, scarlatina, cough, roaring, phthisis, pleu-

risy, hydrothorax, broken-wind, rupture of the heart, aneurism of the aorta, and aneurism of the iliac artery.

The following passages will give our readers some notion of Mr. Percivall's manner: we may premise, that "roaring" means "breathing with a loud or unnatural sound, under exertion of any kind." (P. 36.)

"*Roaring in Man.*—Of this, one instance only has come to my knowledge. I was out shooting one day with two friends, one of whom was quite a lad; when, as I was walking by the side of the other up a hill, I suddenly heard such a whistling behind me, that I sprang round with alarm, thinking there was a roaring, or rather, a whistling horse galloping close at my heels. My fright subsided, but surprise and curiosity took its place, at finding it was my young friend, who was making all this noise in his efforts in climbing the hill. On laughing and telling him he was "a regular whistler," he informed me he had, not long before, been the subject of a severe bronchitis."—(P. 40-1.)

"*Harness-Horses constitute a large class of Roarers.*—We shall probably regard these views as well founded. When we look around us, as we pass through the streets of London, and count the numbers of fine, high-spirited horses there are in carriages, waiting for hours and hours together for their masters and mistresses, and all the while reined up, with their necks crooked in a form unnatural and constrained, and painful even to behold, much more to be borne, as is sufficiently manifest to any one from the continual jerks up and down of the suffering animals' heads; and when we come to consider the constriction, nay, compression, that must all this while be exerted on the larynx, together with the forced bend that must in many take place in the upper portion of the windpipe, can we wonder that these parts should undergo distortion? At first, it is true, the distortion is but a temporary grievance; the intervals of relaxation affording the parts, by nature highly elastic, an opportunity of recovering their shape and tone. Repeated and long-continued acts, however, of such violence gradually enfeeble the elastic powers of the cartilages and their ligaments, and the result is permanent deformity of the larynx or windpipe, or of both together." (P. 43-4.)

Delafond found, that out of fifty-four

broken-winded horses, forty-five had emphysema, including dilatation of the air-cells of the lungs ; so that one-fourth only of the cases arose from other causes.

With care and attention, horses affected with broken wind are far from useless :—

“ By proper feeding, and by condition, it is that we render our broken-winded servant, while free from exacerbation, of the greatest service to us. By a judicious plan of regimen in respect to exercise or work, and feeding and grooming, the animal must be got into the best possible condition. All his grossness, all redundant fat about his body and bowels, must be got rid of, so that nothing remains but sheer hard muscle ; and when this—which is condition—shall be attained, the horse (be he broken-winded, or roarer, or otherwise defective in his “ pipes,”) will do his work with so much comparative facility and comfort, that he will no longer appear like the same animal. His food should be of that kind which will not greatly distend his bowels or be hard of digestion, or prove astringent in effect ; at the same time it must be nutritive, and such as he can work upon. Take care that he does not fill his stomach, and that he gets not water enough to load his bowels, just before he is required for work ; but only sufficient water and food to maintain his stamina, and these given some two, or three, or four hours before his work is likely to commence. The object of all this is, that his respiratory powers—above all, his diaphragm—may play as unencumbered as possible, while at the same time his body is lightened and his stamina strengthened. Give him a peck and a half of oats a-day, and not more than six or eight pounds of hay, and of the best upland quality—no clover, nor sainfoin, nor lucern, nor, in fact, any gross and filling rack-meat—and let him have his hay *after* he has done his work, and, for the most part, his water too. It has often been remarked how well broken-winded horses work when fed on green food, even of almost any description—vetches, clover, lucern, &c. ; which at first appears like a paradox to the above : but, no !—this arises from the easily digestible and laxative properties of the recent vegetable, inasmuch that it remains but a short time within the stomach, and is, during any bodily

exertion, speedily ejected from the bowels.”

Mr. Percivall's treatise is a valuable addition to the veterinarian library.

MEDICAL GAZETTE.

Friday, June 12, 1840.

“ Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri ; potestas modo veniendi in *lpuicum* sit, dicendi periculum non recuso.”
CICERO.

CASES OR CONCLUSIONS?

MUCH is to be said in favour of those medical writers who report a number of cases in detail, and leave their readers to draw their conclusions ; or who, at any rate, do not force any deduction upon the student, without giving him the evidence upon which it is founded. As much, however, or perhaps more, is to be said in favour of those thinkers, who, possessing the *fiduciam magnarum rerum*, the unruffled consciousness of having done great things, claim to be believed upon their bare word, and feel assured that the accents of truth cannot be mistaken, nor their witness rejected by any competent tribunal.

M. Andral made some observations last winter in favour of the latter class of authors, which we find recorded in the *Gazette des Médecins Praticiens*, for Dec. 20th, 1839. He does not wish to be plagued with all the raw material of medical experience, but is satisfied with its essence, after it has been distilled in the alembic of genius. After dividing medical authors into the two classes above mentioned, he observes that among those who have given merely the general results of their experience, there have been ordinary as well as great men ; and that the eminent observers have been those who by the accuracy of their views, as well as by the energy of their descriptions, have given us a guarantee for the truth of what they have advanced. Thus,

the description of small-pox by Rhazes, is perfect; and the picture of phthisis by Aretæus is of striking truth. Sydenham, after having grown old in the practice of physic, sketched the prominent features of the diseases which he had seen, and his descriptions, which are still admired for their surprising fidelity, are not accompanied by the particular cases that occurred in his practice. With one stroke of genius he altered the treatment of small-pox; and this, without counting up so many cases for the method he proposed, and so many against it. Sydenham was the first who pointed out the danger of the word *malignity* applied to diseases. Huxham, again, was not a collector of cases; and yet all that has been said, and said again, for so many years, about typhoid fever, is to be found in Huxham. Pringle, who passed his life in the midst of camps and armies, has handed down the most accurate descriptions of what he saw, without giving the details of a single case. Lind, who was so long in the navy, took advantage of his situation, and published some excellent works on the scurvy. Torti, who is universally known for his treatise on intermittent fever, has favoured us with the results of his experience, but has not told us through how many cases he came to the knowledge of his facts. Broussais, with his eagle glance, looked upon the irritative diseases of the chest, the abdomen, &c. and wrote their history; and we still follow his therapeutic rules. Does the importance of his work on chronic diseases consist in the cases with which it is interspersed? By no means; they are no longer on a level with science: but the hand of a great master is stamped on the book; and it is his theories, and not his cases, which made Broussais effect a revolution in medicine in which we have been both spectators and actors. Follow him, continues Andral, when he surveys Germany or the north of Italy, and paints,

with the boldest touches, the march of disease; such details cannot be drawn from your own single cases. Nor would Broussais have been able to deduce his admirable reflections from the minutæ of particular instances. Or, to finish this rapid sketch, is the *Traité d'Auscultation* made up of cases? Oh, no; all single instances are swallowed up in the exquisite descriptions of Laennec. Omit the cases in his work, and medicine will sustain no loss, for pupils write others as good. But few men compose works like Laennec and Broussais.

Such are Andral's observations on one side of the question; it is very possible that he afterwards gave those on the other, but we cannot lay them before our readers, as we do not happen to have seen the promised continuation of this fragment. It is clear that the chief argument in favour of the publication of cases in detail rests on the distrust felt for the generalization of the majority of practitioners. The inductions so often drawn from an insufficient number of instances, or from cases hastily noted and imperfectly understood, make us hesitate ere we give our confidence even to the true observer, till he adduces the facts on which he has built his conclusions. Perhaps, too, scepticism goes a step farther, and we wish to combine the cases of many writers before we make them the guide to our practice. In other words, the medical pyrrhonist looks forwards to the time when medicine shall be founded on statistics, and considers each good author, for the present, chiefly as a contributor of well-attested facts. Meantime, however, the practice of physic cannot stand still; and when a Sydenham or a Laennec starts up, men of sense do not refuse their assent to his conclusions, nor consider him merely as a compounder of the faultless tables of some future age. It might be objected to Andral, that

Sydenham does give cases. Thus, to mention half a dozen, in his account of the *Febris pestilentialis et pestis annorum*, 1655 et 1666, we find the account of a lady ill of fever, who died in a fortnight, and whose case, says Sydenham, was really a masked pleurisy or pneumonia, and ought to have been treated accordingly; and in the same chapter, there is the case of an apothecary's brother, in whom perspiration was very difficult to produce, but who got better as soon as this function of the skin was restored. In the history of the regular small-pox of the years 1667, 68, and part of 69, there is that instructive example of the patient who was laid out for dead at Bristol, during the absence of his nurse, and who recovered, apparently, from being placed on a table, and covered with a sheet alone. To these, we may add the cases of Dr. Coxe, and the Chaplain of the Earl of St. Albans, both cured of dysentery, and the recovery of Lord Salisbury from continued fever. Yet, it is clear Andral is quite right on this point, and that the value of Sydenham's writings consists, not in the cases which he gives, but in the conclusions that he draws from the boundless stores of his experience, rather registered in his head, than his notebook. Our profession, in truth, has its poetry as well as its prose. The simple record of facts (a useful and meritorious employment) belongs to the latter; while the former claims those generalizations of great writers, those vivid mixtures of fact and theory, where the memory and the imagination combine to form a whole, to which each would have been, singly, inadequate. On the whole, we cannot wonder at Andral's repugnance to those critics who would confine their applause solely to the enumeration of cases, and who would thus censure, by implication, some of the brightest ornaments of medical literature. As to the parrot-cry, "we want facts, and

not theories," it is hardly requisite to observe, that facts are useful only in as far as theories can be founded on them. "But the theories ought to be perfect, else" — perfect when possible; in the interim, let us be satisfied if they are serviceable.

ALARMING ANNOUNCEMENT.

Dona presentis rape lætus horæ.—HORACE.

THE judicious reader sees, at a glance, that the line which we have quoted is of very extensive application. The poet, indeed, means that his friend should snatch at goblets of wine, wreaths of roses, and so forth; but place, pension, and title, often depend on a similar quickness. On the 5th of January you might be elected physician to the Sun-Street Dispensary; at least you might make sure of the election by securing several of the tip-top committee-men; but you hesitate—you doubt, *quid ferre valeant humeri*, whether you are stout enough for so many alleys without, and so many disputes within. On the 6th, another candidate comes up, strong in hopes and sinews, and carries off the nothing per annum (including the occasional censures of the committee) with flying colours. Again, in June, Sempronius might be a baronet if he chose; in July his friends go out of office, on the hop question or the starch question, and Sempronius has no choice but Hobson's.

Yet it may not be immediately obvious that Horace's maxim is applicable to medical degrees. But so it is; these honours are not accessible at all times, but have "their exits and their entrances," as well as the persons who bestow and who receive them. It is not merely that diplomas, like dividends, are given only at certain periods of the year, but they sometimes stop abruptly, as if they were dividends on Columbian bonds—Niagara turns to a quick-sand.

In plain English, universities, instead of growing mellow with time, like pictures and medlars, occasionally resemble too many human beings, and grow more acrid as age advances. This change may take place most rapidly. Strong port, as years roll on, deposits its crust, but retains its flavour; while your *vin ordinaire*, which was originally of the smallest, becomes vinegar within the space of a biennium, without the trouble of any formal process.

These reflections have naturally passed through our mind on reading an advertisement, which appeared in the *Times* about ten days ago. See, here it is, in all its alarmingness :—

“*To Medical Men.*—Any gentleman wishing to obtain the degree of doctor of medicine has now an opportunity of procuring it from one of the highest Continental Universities. In about three months there is great probability alterations will take place in the University, which would interfere with the advertiser’s power to render assistance.”

Observe that the university which is to be occluded about the first of September, and to which the advertiser is a temporary deobstruent, is a considerable one. None of your little gymnasia which are called universities,

As hounds, and greyhounds, mongrels, spaniels, curs, Shoughs, water-rugs, and demi-wolves, are cleped All by the name of dogs :

No, no, it is one of the “highest continental universities.”

It is not, we repeat, a minute academy vegetating in some village known only to compilers of road-books, a university of Anclam, or Kallwang, or Peggau, that intends to be ill-natured; we fear that Heidelberg is going to be crabbed, or perchance Erlangen itself means to scoff at the question

Lenior et melior fis accedente senectâ?

In short, there is no disguising the fact, that some cheap and accessible fountain of honour is to be almost bricked up, and its streams dealt out in a very

niggardly manner. A pint bottle will cost more than a quart did formerly—it will be harder to become an M.B. in 1841, than an M.D. in 1840! The easy remedy is for the ambitious to hasten their steps. Borrow the £20, say we, at any interest, rather than delay; otherwise, what you save in usury, you will spend in grinding. We might observe, too, that after the words which we have quoted as our motto, the poet immediately adds *ac linque severa*; leave severe things, *i.e.* keep away from plucking universities. Yet, after all, a ray of light breaks in upon us; the advertisement is susceptible of a double interpretation, and perhaps the anticipated change is slighter than we had imagined. It is possible that the unknown but distinguished university is about to change, not its examination, but its agent; and that its honours will still be purchaseable, but at some other office.

RUSSIAN PRACTICE.

In a late number of the *Zeitschrift für die gesammte Medicin*, we find an abstract of a Russian medical journal for the year 1838. The German translator has very properly omitted all that Dr. Grum, the Russian editor, had translated from foreign journals, and has also abridged the original matter. The following is a part of what he has retained.

Cure of old ulcers.—Dr. Schreiber, chief physician to the Brestlitofski military hospital, gives a number of cases where old ulcers were rapidly healed by the application of fresh soft cheese; the slices being renewed every two hours. This application diminishes the pain and fœtor at the same time, and has succeeded in cases where the ordinary pharmaceutical remedies had been used in vain.

On the external use of living ants, (formica rufa), by Dr. Schreiber.

The summer division of the author’s hospital lies in a wood, where there are so many ant-hills, that the thought struck him of drawing some advantage from them for his patients. As ant-baths and tincture of ants were of no great use, he tried the living insects in paralysis, hemiplegia, paresis, and invete-

rate arthritis. The ants are to be taken directly from their hill, and put in a bag; and this bag is to be tied over the limb in such a manner that the ants cannot escape [but obtain access to the skin.] Some time after their application to the paralyzed limb, the patient begins to feel the running and biting of the ants, by which they gradually excite a kind of electrical twitches, and a feeling of warmth, which gradually extends over the whole body. Moreover, by their ethereal principle, they cause as violent a perspiration over the whole body, as if the patient were in a vapour bath. The paralyzed part must be kept in the bag with the ants for two or three days; the patient is then to rest for a day, after which the ants are to be applied again; and this is to be repeated till the object is attained. In 1835, Dr. Schreiber obtained a favourable result in seven cases of paralysis; in 1836, in four; and in 1837, in three; by which he was encouraged to use the same remedy in chronic rheumatism and gout. It is unnecessary to remark that this remedy alone cannot be of much service, if the case is complicated with syphilis, scurvy, or scrofula; but the military hospitals have plenty of uncomplicated cases, and in three years forty-six patients under this head were cured.

Dr. Schreiber now began to use the remedy in dropsy proceeding from inactivity of the skin. In anasarca it was found sufficient to tie up the lower extremities in bags with living ants, and thus obtain profuse sweating and a cure. This method of treatment, supported by gentle purgatives and sudorifics, succeeded in twenty-one cases. (The German translator here remarks that he cannot call ten grains of jalap with the same quantity of calomel, a "gentle purgative.")

In a case resembling elephantiasis, where the leg was cold, hard, and swollen, and a variety of treatment had been employed in vain, the disease was entirely removed within twenty days, under the use of living ants, and the patient was dismissed cured. The author mentions incidentally, that, in Little Russia, they employ a home-made spirit of ants, called *murashkowka*, to prepare a punch which is used in many varieties of colds, with very great advantage.

Russian Baths, as remedies against the Bite of Mad Beasts.

As soon as the patient is admitted into the hospital, Dr. Miroff directs him to be placed in a Russian bath, and exposed for an hour, with the wound uncovered, to a temperature of 50°*. As soon as he is in

the bath he drinks a pint and a half of a decoction, made with equal parts of sarsaparilla and guaiacum wood. While in the bath the wound is rubbed with mercurial ointment, and is afterwards kept open for two months by irritating ointments. The baths are at first repeated every other day, during the second and third week every three days, and afterwards twice a week, until the expiration of two months from the beginning of the treatment. Light diet is the only additional point to be observed during its continuance. The patient remains under superintendence during the third month. The author gives five histories of cases occurring at different times, and all terminating favourably.

Allium ursinum in Scurvy.

The efficacy of this remedy is known throughout all Grusia; but as it is to be obtained in a few places only, and soon spoils, and, when fresh, suffers much from carriage, it has been tried to preserve it acidulously†, and then eat it with vinegar. But the remedy, when preserved in this manner, not only obtained a peculiar sharpness and unpleasantness, but also lost its specific effect. Dr. Miroff, therefore, attempted to dry it carefully, which succeeded beyond his expectations. The remedy not only loses none of its efficacy, but is diminished nine-tenths in weight, making it more convenient for carriage. He gave the dried plant in scurvy with advantage, mingled with the patient's food.

Delirium Tremens from Debauchery.

Dr. Bileff, after narrating the history of the case at great length, gives the effective prescription, which was as follows:—

R. Morph. Acet. gr. j.; Mosch. Opt gr. iij.; Calom. gr. xij.; Sacch. ʒj M. disp. tal. dos. No. vj.

The patient took one of these powders every two hours, and had five in all.

The German translator complains of this formula as too complicated, and thinks that if the morphia had been given alone, it might have done its duty earlier than in combination with twelve grains of calomel in each dose. So large a quantity of calomel every two hours seems the more dangerous, he adds, as the patient had already sunk very low through continual drunkenness, syphilis, and the frequent use of mercury, and, therefore, had not much more strength to lose.

Practical Remarks, by Dr. Krassnogludoff, of the village of Suchadi, in Mingrelia.

1. He directs our attention to the affec-

It is hardly necessary to add, that the vapour-bath is intended.—TRANSLATOR'S NOTE.

† In the original, *es zu sauern*, to sour it; that is, probably, to preserve it after the manner of sour-cROUT.—TRANSLATOR.

* If the centigrade thermometer is meant, this will be equivalent to 122 deg. of Fahrenheit; if Reaumur's, it will be equal to 144½ deg. of Fahr.

tions of the spinal marrow in intermittent fever, which so commonly occur in Mingrelia. The complaints of the patient of pain in the back during the fit are at first commonly disregarded; but when they occur, bark does not cure the case, and then the practitioner begins to pay greater regard to this symptom in the following paroxysms. Moreover, when the patient after the paroxysm complains of a severe sensation of being bruised, and paralysis of the upper or lower extremities, the corresponding part of the spinal marrow is affected, a fact which is clearly ascertained on examination. Blisters on the part soon relieve the patient, and eight grains of quinine will now cure an intermittent, where a drachm between two paroxysms had previously been of no avail.

2. As the itch insect, and its propagation under the skin, have been demonstrated, Dr. Krassnogládoff proposes the question, whether these animalculæ are not able to enter the body, live in the alimentary canal, and multiply there, as well as under the skin? This question is prompted by the following case:—"In August, 1837, a peasant was brought to me from a village in Mingrelia. He had had the itch for several years, which is extremely common among his country people, until it covered the whole surface of his body. It is unnecessary to mention, that the head, palms of hands, and soles of the feet, were free from pustules; but, with these exceptions, no part of the body had remained unscathed, only that there were vacant spaces between the clusters on the chest and abdomen. The patient could not do his work, but went to bed at noon, in order to mitigate the itching by scratching. But it was not the external eruption that annoyed him so much. In the thorax, along the course of the œsophagus, and in the direction of the stomach, he had an unceasing and unbearable itching, which gave him the most uneasiness. I employed the English method of treating itch, and prescribed flowers of sulphur internally, adding a drop of oil of lavender to each dose. The patient also suffered much from constipation, so that frequent purgatives were necessary. The internal itching decreased with the decline of the eruption, and on the sixteenth day the patient was free from both. The internal eruption, therefore, had a close connection with the itch, and we may assume that this itching was caused by scabies, as it was removed simply by the use of a specific against that disease."

Hydrophobia.—At the meeting of the Society of Russian Physicians at Petersburg, on the 20th Dec., 1837, Dr. Brikoff stated that, in the government of Koursk, the *Thalictrum flavum* (Spanish meadow-rue) is used with advantage against hydro-

phobia. An infusion is made with two ounces of the herb, and sufficient water to produce sixteen ounces after straining, and this quantity is taken in twenty-four hours. Dr. Grum remarks upon this that the plant was long ago described, and that Professor Smelofski was sent by the medical board into that country, in order to collect what was known about it on the spot.

[To be continued.]

GOUT PAPER.

ACCORDING to Mr. G. Berg, an apothecary in Stuttgart, English gout paper, which is also known under the name of *Charta anti-rheumatica*, may be made in the following manner:

℞ Euphorbii, ʒj., Cantharid. ʒss., Alcoholicis, ʒv. Digere per viij. dies, cola et filtra; tum adde

Colophonii albi, ʒj., Terebinth. Venet. ʒiss. M. F. l. a. vernix.

Common letter paper is to be pencilled over three times with this varnish. Gout paper thus prepared sticks fast to the skin, and does not shift its place.

Mr. C. F. Pirwitz, an apothecary at Petersburg, gives the following prescription for a *charta derivans*:

℞ Cantharid. pulv. ʒss., Resin. Guaiaci, ʒijj., Galbani, ʒvj., Alcoholicis, ʒvj. Digere l. a., tum cola et adde

Colophonii, ʒiiss., Terebinth. Laric. ʒj. Solve l. a., ut f. vernix.

This varnish is to be warmed in a water bath, and then rubbed upon fine writing paper, two or three times with a pencil; observing, that the first layer is to be perfectly dry before the next is put on.

Schmidt's Jahrbücher, Jan. 25, 1840.

EXAMINATIONS AT THE COLLEGE OF SURGEONS.

To the Editor of the Medical Gazette.

SIR,

So many misstatements have, at different times, been promulgated with regard to the character of those examinations which every candidate for the diplomata of the Hall and College is compelled, and rightly too, to undergo, that I cannot but feel it due, not merely to the examining courts of those Bodies, but to the students and the public generally, to beg a corner in your valuable publication, in order to testify, that my experience, at least, is entirely at variance with those statements which have been so industriously circulated; and in bearing this testimony, sir, I believe I shall be supported by all who, with myself, have obtained the distinction of which I write. I wish, then, to affirm, in opposition to those statements with regard to the ex-

amination to which I have alluded, at the Royal College of Surgeons, that not only was invidious and clap-trap interrogation avoided, and the examination of such a character as to become an excellent test of an individual's real anatomical and surgical acquirements, but the mode in which it was conducted was such as to impress the mind of the student with the highest opinion of the attainments and gentlemanly bearing of the examiners, and with the inspiring conviction that it was their evident and anxious wish that he should succeed in the object he had in view. So plainly and so earnestly was this displayed, that I feel it no less a gratification than a duty, considering the glaring misrepresentations which have abounded, and how entirely they appear to be believed by the great bulk of medical students, to record that the hour and a half I spent before the Council of the Royal College, was not only one of the proudest, but in honest truth, one of the pleasantest in my life.

Immediately after my examination had concluded, I employed myself in recalling to memory, and committing to paper, the various questions which had been proposed to me during the evening; and I have no doubt, sir, that by inserting them, you would do far more to rectify those false impressions which students so generally entertain, than by any other plan which could be named.—I am, sir,

Your obedient Servant,

JOSEPH B. GRAY, M.R.C.S.

Licentiate of the Company of Apothecaries.

Duke Street, Chelmsford.

June 1st, 1840.

SIR ASTLEY COOPER.—How many bones form the pelvis? Where is the os sacrum situated? With what bones is it connected? Of how many bones does it consist? How is it developed in the fœtus? What substance is interposed between its separate bones in the young subject? What form is the sacrum anteriorly? Why? What does it present in the centre? What do you observe on the posterior surface? How many are its foramina? What joins it below? What do you notice laterally? What is the structure of the bone? At what part do the great sciatic ligaments arise?

Where is the os coccygis? Of how many bones is it formed? Are they connected by bony union in the adult? Have its bones any motion? And why?

Tell me the origin and insertion of the sciatic ligaments? What passes through the sciatic notch? Give me the origin and insertion of the pyriformis? Of what artery is the superior gluteal a branch? Can it be tied, and where? Tell me the point at which the internal pudic artery re-enters the pelvis? What is its course? Where does it terminate? What nerve accompanies it? Of what plexus is that a

branch? What are the branches which the pudic artery first gives off? Tell me its branches in its third stage? What artery is invariably wounded in the operation of lithotomy? Is any other endangered? To what parts of the penis is the arteria dorsalis penis distributed? What vein returns the blood from the penis? Where does that terminate, and what is its course?

What would you do in cases of hæmorrhage from the penis, arising from sloughing ulcers or ruptured urethra, &c.? How would you restrain hæmorrhage from the urethra? Where would you compress the pudic artery? What should be your guide in tying the pudic artery?

MR. ANDREWS.—What are the earliest symptoms of scrofulous disease of the hip-joint? At what period of life does it usually occur? At what period is treatment most likely to be beneficial? How does the disease generally terminate? What is the cause of the pain in the knee? What nerve is affected? Where does the anterior crural nerve issue from the abdomen? What are the most useful counter-irritants in affections of the hip-joint? Would you blister?

Do not small-pox, measles, and scarlatina, frequently dispose to swelling of the cervical glands? Would you leech these? What then would you do? And what medicines would you give internally?

MR. VINCENT.—Give me the origin and insertion of the external oblique muscle of the abdomen? What are the pillars of the ring? Describe the inter-columnar fascia? Tell me the origin and insertion of the internal oblique? How is the sheath of the rectus formed? Give me the origin and insertion of the transversalis? What muscles does the external oblique interdigitate with? What nerves form the cervical plexus? What nerves form the phrenic? Does it receive a filament from the fifth cervical nerve? Upon what muscle does it descend in the neck? Between what vessels does it enter the chest? What nerve does it here communicate with? To what organ is it distributed?

MR. GUTHRIE.—Why is hæmorrhage from arteries most difficult to control? How is arterial bleeding characterized? What would you do in hæmorrhage of the smaller arteries? What would you do if called to a patient who had received a stab in the femoral artery? Why would you tie "both ends"? What are the means nature adopts to stop hæmorrhage? What would you do in treating a wound of the axillary artery, below the lower edge of the pectoralis minor? What in a case of wound of the radial artery? How would you know when inflammatory action had ceased in the knee-joint?

Showing the Number of Deaths from all Causes, registered in the Four Weeks ending May 23, 1840.

Causes of Death.	May 1840.				Weekly Average, 1838.
	Ap. 26—May 2.	3rd—9th.	10th—16th.	17th—23rd.	
Small-Pox.....	15	13	18	15	73
Measles.....	21	19	17	18	11
Scarlatina.....	35	42	46	35	29
Whooping Cough.....	26	25	25	11	40
Croup.....	9	7	9	8	7
Thrush.....	9	4	4	3	6
Diarrhoea.....	4	6	2	2	8
Dysentery.....	..	..	1	..	2
Cholera.....	..	..	..	1	.3
Influenza.....	2	..	..	..	1
Typhus.....	25	41	28	25	78
Erysipelas.....	5	5	7	7	8
Syphilis.....	..	..	..	1	1
Hydrophobia.....	..	..	..	..	.2
Total	151	162	157	126	265
Cephalitis.....	14	19	15	12	10
Hydrocephalus.....	32	38	37	39	34
Apoplexy.....	12	20	17	17	19
Paralysis.....	23	4	18	13	14
Convulsions.....	41	50	54	43	67
Epilepsy.....	6	6	3	2	4
Insanity.....	..	1	1	3	1
Delirium Tremens.....	1	4	2	1	1
Dis. of Brain, &c.....	5	6	5	7	6
Total	134	148	152	137	156
Quinsey.....	4	..	5	..	2
Bronchitis.....	8	10	8	7	8
Pleurisy.....	1	4	1	1	2
Pneumonia.....	92	66	67	51	71
Hydrothorax.....	5	5	5	3	6
Asthma.....	15	16	17	15	28
Consumption.....	131	148	123	130	146
Dis. of Lungs, &c.....	10	13	12	12	10
Total	266	262	238	220	275
Pericarditis.....	1	..	..	1	.3
Aneurism.....	2	..	..	..	.5
Dis. of Heart, &c.....	15	12	16	20	15
Total	18	12	16	21	16
Teething.....	18	21	17	15	15
Gastritis—Enteritis.....	13	10	20	17	17
Peritonitis.....	3	..	..	1	1
Tabes Mesenterica.....	7	4	5	5	3
Ascites.....	..	..	2	1	.4
Ulceration.....	1	1	1	..	1
Hernia.....	3	1	1	6	2
Colic or Ileus.....	..	3	1	2	4
Dis. of Stomach, &c.....	9	3	10	6	4
Hepatitis.....	1	..	..	1	1
Jaundice.....	1	2	..	..	2
Dis. of Liver, &c.....	6	4	9	8	7
Total	62	49	66	62	57

Causes of Death.	May 1840.				Weekly Average, 1838.
	Ap. 26—May 2.	3rd—9th.	10th—16th.	17th—23rd.	
Nephritis.....	..	..	..	..	.5
Diabetes.....	1	..	2	1	.4
Stone.....	2	..	1	..	.4
Stricture.....	..	..	..	..	.6
Dis. of Kidneys, &c.....	5	3	3	3	3
Total	8	3	6	4	5
Childbed.....	7	5	4	4	8
Ovarian Dropsy.....	..	..	2	..	.3
Dis. of Uterus, &c.....	2	..	1	1	2
Total	9	5	7	5	10
Rheumatism.....	2	2	3	6	4
Dis. of Joints, &c.....	1	2	7	6	4
Total	3	4	10	12	8
Ulcer.....	..	..	..	..	.4
Fistula.....	..	..	2	1	.4
Dis. of Skin, &c.....	..	..	1	..	.4
Total .....	..	..	3	1	1
Inflammation.....	8	6	5	7	18
Hæmorrhage.....	5	5	5	4	4
Dropsy.....	29	31	37	25	34
Abscess.....	7	8	8	7	4
Mortification.....	2	8	4	8	4
Scrofula.....	4	3	1	..	1
Carcinoma.....	6	8	12	6	6
Tumor.....	..	2	1	3	1
Gout.....	2	..	1	1	1
Atrophy.....	8	5	2	5	4
Debility.....	17	18	27	21	12
Malformations.....	..	..	2	..	1
Sudden Deaths.....	16	7	15	15	12
Total	104	101	120	102	102
Old Age, or Natural } Decay.....	68	58	62	49	79
Intemperance.....	1	1	..	..	.4
Privation.....	..	1	..	..	.6
Violent Deaths.....	25	21	15	17	25
Total	26	23	15	17	26
Causes not specified.....	4	3	1	..	13
Deaths from all Causes.....	853	830	853	756	1013

May 1840.	AGES.		
	0—15	15—60	60 & upwards.
Ap. 26—May 2.....	380	304	168
3rd—9th.....	367	298	163
10th—16th.....	394	295	163
17th—23rd.....	344	264	146
Weekly } Average, 1838.....	466	352	192

Estimated Population, 1840.	Ap. 26—May 2.	3rd—9th.	10th—16th.	17th—23rd.	Weekly Average, 1838.
West Districts, 308,920	140	136	148	114	156
North Districts, 414,458	165	149	148	151	172
Central Districts, 369,722	170	167	158	145	208
East Districts, 411,635	151	155	182	152	239
South Districts, 450,265	227	223	217	194	194
1,955,000	853	830	853	756	1013

OF

DRUGS ON SALE IN THE ENGLISH MARKET,

With their Prices and several Duties.

(From the Official Returns, June 9, 1840.)

	PRICE.			DUTY.	DUTY PAID.	
	£	s.	d.		In 1839 to last week.	Same time last year.
Aloes, Barbadoes, D.P. c	15	0	0	to 30 0 0	} B.P. lb 0 2 } F. lb 0 8 }	41,649 51,575
Hepatic (dry) BD. c	5	0	0	10 0 0		
Cape, BD. c	1	15	0	3 10 0		
Anise, Oil of, German, D.P. lb	0	5	0	0 5 6	F. lb 1 4	521
E. I. lb	1	10	0	3 10 0	E. I. 1 4	382
Asafoetida, B.D. c	0	1	0	0 1 1	c 6 0	43
Balsam, Canada, D.P. lb	0	1	0	0 1 1	lb 0 1	2,887
Copaiba, BD. lb	0	1	6	0 1 9	c 4 0	353
Peru, BD. lb	0	4	6	—	lb 1 0	154
Benzoin (best) BD. c	25	0	0	50 0 0	c 4 0	21
Camphor, unrefined, BD. c	30	0	0	—	c 1 0	185
Cantharides, D.P. lb	6	3	6	—	lb 1 0	8,249
Caraway, Oil of, D.P. lb	0	9	0	—	lb 4 0	951
Cascarilla or Eleutheria Bark, D.P.C. lb	3	10	0	—	lb 0 1	1,915
Cassia, Oil of, BD. lb	0	8	6	—	lb 1 4	1,492
Castor Oil, East India, BD. lb	0	0	4	0 0 10	c 1 3	3,351
West I. (bottle) D.P. 1½ lb	—	—	—	—	} lb 0 6 }	3,103
Castoreum, American lb	0	17	0	0 18 0		298
D.P. Hudson's Bay lb	0	18	0	1 0 0		467
Russian lb	none			—	} c 1 0 }	29,707
Catechu, Bd. Pale c	1	1	6	—		18,067
Dark c	1	8	0	—		—
Cinchona Bark, Pale (Crown) lb	0	2	0	0 3 6	} lb 0 1 }	22,786
BD. Red lb	0	2	0	0 4 0		29,580
Yellow lb	0	4	0	0 4 4		—
Colocynth, Turkey lb	0	1	6	0 2 9	} lb 0 2 }	2,644
D.P. Mogadore lb	0	1	0	—		4,336
Calumba Root, BD. c	0	12	0	1 15 0	lb 0 2	6,670
Cubebs, BD. c	3	0	0	3 10 0	lb 0 6	19,920
Gamboge, BD. c	5	0	0	15 0 0	c 4 0	26
Gentian, D.P. c	1	10	0	—	c 4 0	181
Guaiacum, D.P. lb	0	1	0	0 3 0	c 6 0	1
Gum Arabic, Turkey, fine, D.P. c	12	0	0	13 0 0	} c 6 0 }	3,925
Do. seconds, D.P. c	7	0	0	7 10 0		6,108
Barbary, brown, BD. c	1	17	0	1 18 0		—
Do. white, D.P. c	5	10	0	—	} c 6 0 }	2,643
E. I. fine yellow, BD. c	2	5	0	2 14 0		3,450
Do. dark brown, B.D. c	1	15	0	2 5 0		—
Senegal garblings, D.P. c	3	0	0	—	c 6 0	10,948
Tragacanth, D.P. c	8	0	0	12 0 0	c 6 0	104
Iceland Moss (Lichen), D.P. lb	0	0	2½	0 0 3	lb 0 1	1,925
Ipecacuanha Root, B.D. lb	0	1	3	0 1 6	lb 1 0	3,032
Jalap, BD. lb	0	2	8	—	lb 0 6	22,354
Manna, flaky, BD. lb	0	3	0	0 3 3	} lb 0 3 }	7,522
Sicilian, BD. lb	—	—	—	—		5,595
Musk, China, BD. oz	1	0	0	3 10 0	oz 6 0	876
Myrrh, East India, BD. c	5	0	0	14 0 0	} c 6 0 }	92
Turkey, BD. c	2	0	0	11 10 0		117
Nux Vomica, BD. lb	0	8	0	0 9 0	lb 2 6	272
Opium, Turkey, BD. lb	0	9	0	—	lb 1 0	19,226
Peppermint, Oil of, F. BD. lb	0	10	6	—	lb 4 0	2,936
Quicksilver, BD. lb	0	3	11	—	lb 0 1	154,750
Rhubarb, East India, BD. lb	0	6	0	0 8 0	lb 1 0	4,740
Dutch, trimmed, D.P. lb	0	8	0	0 9 0	} F. lb 1 0 }	11,799
Russian, BD. lb	0	7	6	0 8 6		1,599
Saffron, French, BD. lb	—	—	—	—		—
Spanish lb	1	0	0	—	lb 1 0	1,565
Sarsaparilla, Honduras, BD. lb	0	1	0	0 1 9	} lb 0 6 }	61,169
Lisbon, BD. lb	0	2	0	—		57,119
Scammony, Smyrna, D.P. lb	—	—	—	—		—
Aleppo lb	0	18	0	1 0 0	} lb 2 6 }	6,328
Senna, East India, BD. lb	0	0	3	0 0 4		4,918
Alexandria, D.P. lb	0	1	6	0 1 8	E. I. lb 0 6	45,837
Smyrna, D.P. lb	0	1	0	0 1 3	} Other sorts 0 6 }	35,372
Tripoli, D.P. lb	0	1	0	0 1 3		40,345

‡‡‡ BD. In Bond. — c. Cwt. — B. P. British Possessions. — F. Foreign. — D. P. Duty paid.

CALOMEL WITH IODINE AND SUGAR.

THIS combination is employed in Riga, for the hydrocephalus of children, with marked success. The usual prescription is as follows:—

R. Calomel, gr. viij., Iodin. gr. j., Sacchari albi, gr. lxxx. M. ft. pulv. divid. in xvj partes æquales.

Powdered digitalis with *pulvis gummosus* are sometimes combined with it. If the calomel is first rubbed with the iodine, and the sugar then added, the powder becomes red; but if the calomel is first mixed with the sugar, and then the iodine added, the colour is greenish; deuto-ioduret of mercury being formed in the first case, and the proto-ioduret in the second. This supposition has been pretty well confirmed by analysis. The red powder has effected the greatest number of cures. According to theory, eight grains of calomel, mixed with one of iodine, should afford, of

Protochloride of mercury (calomel), 6·124 gr.

Dento-chloride of mercury (corrosive sublimate), 1·078 gr.

Dento-ioduret of mercury 1·798 gr.

The only difference in the result of actual analysis was, that the powder contained a trace of proto-ioduret of mercury, and in consequence rather more corrosive sublimate than the theory supposes.

As each powder is made, according to the above prescription, with half a grain of calomel and one-sixteenth of a grain of iodine, it contains after the manipulation:

Corrosive sublimate 0·067 or about 1·16th of a grain.

Calomel 0·383 or about 2 5ths of a grain.
Red ioduret of mercury 0·112 or about 1·9th of a grain.

Schmidt's Jahrbücher, Jan. 25th, 1840.

SMALL-POX PUSTULE IN THE BLADDER.

DR. GREENE presented a remarkable specimen of small pox on the mucous membrane of the bladder. The patient, a young man, died of small-pox. While convalescent from fever, he caught infection from another person in the same room, and had the disease in a confluent form. He died on the fifth day after the appearance of the eruption, and shortly before his death was attacked with severe diarrhœa. There were no pustules in the respiratory passages or intestinal tube. —*Dublin Journal of Medical Science*.

* By an error of the pen or the press, this is 383 in the original.—TRANSLATOR.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, May 21.

Samuel Fowler Underharg, Brixham, Devon.—Franklin Hudson, Ewell, Surrey.—Edward Henry Whittle, Lamberhurst, Kent.—Charles Ricketts, Titchfield, Hants.—Rice Warbrough, Bristol.—John Kay.—Henry Barrington Tuttle, Newport, Isle of Wight.—John Dunn Wrangham, Wragby, Lincolnshire.—Thomas Marchant Tomkin, Witham, Essex.—Henry Long Jacob, Rochester.—Robert Simon Marsh, Liverpool.—William Isaac Nicholas, Winchester, Hants.—John William Fletcher, Shifnal, Shropshire.—Joseph Chapman, Blundeston, Suffolk.—Henry Girdlestone.

Thursday, May 28.

Charles Benjamin Painter, Broadway, Westminster.—John Cosh Neild, Manchester.—Henry Baller, Bideford, Devon.—Richard Turner, Lannington, Suffolk.—Samuel Holmes, Bradford, Yorkshire.—William Cumming, West Indies.—John Ellis.—Norman Chevers, Greenhithe, Kent.—Edwin Wing, Melton Mowbray.—Bartin Thomas Burton, Australia.—John Hopkin Peirce, Clyduck Iron Works, Breconshire.

WEEKLY ACCOUNT OF BURIALS.

*From Bills of Mortality, June 9, 1840.**

Abcess	1	Hooping Cough . . .	7
Age and Debility . . .	21	Inflammation . . .	6
Apoplexy	1	Bowels & Stomach . .	1
Asthma	3	Brain	1
Cancer	2	Lungs and Pleura . .	5
Childbirth	2	Influenza	3
Consumption	39	Measles	1
Convulsions	20	Paralysis	1
Dentition	3	Small-pox	3
Dropsy	4	Spasms	1
Dropsy in the Brain . .	5	Unknown Causes . . .	39
Fever	7		
Fever, Scarlet	12	Casualties	6
Heart, diseased	2		

Decrease of Burials, as compared with the preceding week } 18

METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.*

<i>June.</i>	Thermometer.	Barometer.
Wednesday 3	from 47 to 60	29·96 to 30·08
Thursday . . 4	41 65	30·11 30·06
Friday . . . 5	50 61	29·93 29·99
Saturday . . 6	49 72	29·86 29·84
Sunday . . . 7	54 69	29·90 29·95
Monday . . . 8	42 72	29·97 29·96
Tuesday . . . 9	56 73	29·93 29·92

Wind very variable, S. prevailing.

Except the 4th, 5th, and 9th, generally clear. Raining very heavily on the afternoons and evenings of the 5th and 6th; also, a little rain fell on the 9th.

Rain fallen, 1 inch and 34 of an inch.

CHARLES HENRY ADAMS.

ERRATUM.—In our last number, p. 445, for "W. Wickham, surgeon to the Westminster Hospital," read, "surgeon to the Winchester Hospital."

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JUNE 12, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISEASES OF BONE, *continued.*

CARIES — NECROSIS — TUBERCLES —
EXOSTOSIS.—*Their Nature — Symptoms —
Diagnosis — Prognosis — Treatment.*

CARIES.

CARIES is a disease of bones characterised by alteration and destruction of their organic structure, by softening, by friability, and ultimately by the secretion of a sanio-purulent fluid.

Galen, who very sagaciously remarked that the diseased bone became fatty and then black, compared it to ulceration of the soft parts; he thought the disease resulted from the corrosive action of the sanies or pus, exhaled from surrounding parts, upon the bony tissue. Ambroise Paré, on this, as on most other subjects, was the first to carry the investigation further. Still no great advance was made, not even enough to separate caries from necrosis, before the investigations of Duverney and Monro. Duverney described two forms of caries, one dry, which he compared to the mortification of the bark of a tree, this is necrosis; the other humid, or proper caries. Monro refined too much: he described seven species of caries; of these, two were necrosis, two were cancer, the three others were different degrees of caries. Louis applied the term necrosis to mortification of bone, and placed a definite distinction between the two diseases.

In discussing the anatomical characters

of caries, we may, with Sanson, divide the disease into three periods. In the first, the disease may begin on the surface, or in the substance of bone: in the former case, reddish and brownish spots are here and there observable: the periosteum at these points has ceased to adhere; and at surrounding points it is red, softened, thickened, and easily detached; the bone has lost its hardness, and a cutting instrument easily divides it. If the affection be seated below the surface, but not deep, there is tumefaction perceptible on the surface, the cells are enlarged, in their cavities a reddish liquid is found, the cohesion of the bone is diminished, so that it yields to the knife, sometimes even to the finger. When the centre of the bone is the seat of the affection, the changes are the same, except the tumefaction, which is sometimes greater. In the second stage, if superficial, the surface is red, softened and unequal, the colour is yellowish, brown or blackish, the sanious fluid of the cells is mixed with pus, which smells like rancid lard. The cells may enlarge so as to constitute true abscesses. Through the cellular structure a probe easily passes, breaking down the lamellæ. In the third stage, the bone is black, its earthy portion is gradually lessened, either by absorption, or by being mixed with, or dissolved in, the pus or sanies, and carried away. Much of the bone may thus disappear, and unless nature or art interfere to arrest its progress, it may implicate new portions, until the patient sinks exhausted by profuse suppuration, hectic, and other accidents. Sometimes we see new osseous vegetations forming almost around the disease; sometimes they are furnished by the periosteum, sometimes from the surface of neighbouring bone. These are very commonly seen in cases of caries of the spine. Cloquet saw a case in which a bony cylinder, pierced with holes for the escape of pus, replaced four vertebræ destroyed by caries; another

case is mentioned, where the humerus being fractured by a bullet, no attempt at union occurred; the fragments suffered from caries: the specimen was examined twelve months after, when an osseous column, covered with delicate periosteum, connected the two fragments, which were distant from each other more than an inch.

If caries occupy the shaft of a bone, the periosteum at the part is destroyed; at a short distance it is thickened: the pus which is secreted makes its way out, but its course is rarely direct. It is usually sanious, fetid, ammoniacal, and contains broken-down portions of bony matter.

If we macerate a carious bone, after a time the water will be covered with oily or fatty matter: removed from the water, it dries with difficulty; if the caries be very advanced, the quantity of oily matter is much greater: its blackish colour is not lost by drying, but it becomes very brittle.

Chemically examined, if the disease be not much advanced, it is found that the organic framework is transformed partly into fatty matter, and that the proportion of this matter is as much greater as the disease is more advanced; and that where the fragility is very great, and the black colour denotes that the disease has arrived at its last stage, the animal substance has completely disappeared. To verify these results, Sanson macerated a portion of carious rib in dilute acetic acid, and the whole dissolved; another portion of the same rib, in which caries was less advanced, similarly macerated, left only a very small portion of gelatinous matter. These circumstances tend to prove, that caries is a disease of the organic structure, that this structure is at first transformed into fatty matter, and afterwards destroyed.

Though the general tendency of caries is to extend, cases sometimes occur in which the disease is spontaneously cured. Two means have been pointed out by which this fortunate termination is effected. In the first and most frequent, the inflamed bone reddens around the carious point, and a line of demarcation is set up between the healthy and carious bone; in this line granulations are developed, and beyond this line the disease does not extend. In the second mode the ulcerated point of bone seems to clean, to granulate, and ultimately it cicatrises. In both cases the granulations acquire daily more consistency, unite, and form a mass in which calcareous matter is deposited. The fistulous openings in the soft parts contract, close, and leave after them more or less unsightly cicatrices.

In a few words we may now consider what is the nature of caries. Is it analogous to ulcers in the soft parts? Is it a form of necrosis, or is it an inflammation of bone—osteitis?

Galen inclined to the first opinion; so did Monro, Soemmerring, and with slight modifications Petit, Lobstein, and Rieherand; but the history of the disease is very little advanced by saying it is like an ulcer of the soft parts, because ulcers are very varied; they may be cancerous, syphilitic, atonic: both, it is true, present a suppurating surface, but that is not enough to make out an analogy between them.

It is only in the last century that caries was distinguished from necrosis; previously they were described as humid and dry caries. Louis established, that in necrosis there was death of the affected part, and an eliminatory process set up by which it was removed; that in caries the affected part continued to live, and that no well-defined separation takes place. Some persons still cling to the opinion that the diseases are identical, the only difference being, say they, difference of seat: when the compact tissue is affected, it is necrosis; when the spongy suffers, it is caries. It is not difficult to refute this opinion; exfoliation is the capital circumstance in necrosis; nothing similar is observed in caries. As to seat, caries of compact bones is not a very rare circumstance; it has been seen in the patella (Petit), the olecranon (Blandin), the calcis (Crucillier), the metatarsus (Malgaigne), superior extremity of tibia (Brodie), of humerus (Weidmann), femur (Cooper); and the spongy extremities of long bones may be necrosed. Certainly nothing is less logical than to confound two diseases because they happen to depend on similar causes. A current of cold may produce in one case rheumatism, in another catarrh. Now should we call these affections identical? It is much more reasonable to confound caries with osteitis; between caries and inflammation the following analogies may be traced: in caries afflux of blood and redness mark its commencement; softening follows: to these pain and tumefaction may be added, and we have, with the exception of heat, the ordinary characters of inflammation; lastly, the production of pus, common in inflammation, is almost always met with in caries. But although these analogies exist, there are very decided differences; among these is the progressive destruction and loss of substance—inflammation rarely destroys a whole organ, while a short bone often disappears completely under caries; again, in the course of caries left to itself, the disease increases indefinitely: this invading tendency is not the character of inflammation. Therefore, I think, caries cannot be likened to necrosis, nor to an ulcer of the soft parts, nor even to inflammation. Still its nature is as well determined as that of most other affections, for we know that it consists in changes in the osseous tissues; that the investigations

of surgeons and chemists have pointed out, and to which we have sufficiently alluded.

All bones are exposed to caries, but their spongy portion suffers more frequently than the compact, probably because it is more vascular; thus it is that the bones of the carpus, the tarsus, the spine, the sternum, the sacrum, the thicker portion of the iliac bones, the scapula, and the extremities of long bones, suffer most frequently.

Children suffer more frequently than adults or aged persons, and in them its progress is more rapid.

Causes.—The causes of caries are external, or local, and internal, or general; causes which act mechanically on bones are capable of exciting it; it often follows contusions, sprains, &c. Abscesses of the soft parts produce it less frequently than was supposed when pus was conceived to be a corrosive fluid, capable of destroying the periosteum. The greater number of the cases of caries are produced by internal causes; of these syphilis holds a prominent place, but, certainly, many cases of what is termed syphilitic caries are necrosis. Scrofula is probably a more frequent cause than syphilis; it attacks, especially, lymphatic children, before the age of puberty. Scorbutus not very unfrequently produces caries of the jaw, the sternum, the pelvis, the spine, the hand, and the foot. Rheumatism and gout are not very unfrequent causes of caries.

It is rare that the progress of caries is rapid; the inflammation which precedes and accompanies it excites, at the affected point, a fixed, permanent pain, which, when the disease is syphilitic, becomes more intense during the night. If a joint be the seat of the affection, it is not moved without pain and difficulty. If it affect a superficial bone, a circumscribed tumor is presented; it is painful on pressure, but, at first, the colour of the skin is not changed; sometimes there is fluctuation; at others, some time elapses before it softens. The adjoining soft parts are inflamed and tumid, the tumor is raised, softens towards the centre, where it reddens, ulcerates, and purulent matter escapes; this purulent fluid is a greyish, thin sanies, containing flakes of albumen, or portions of bony matter; its smell is sickly and fetid. After opening, the tumor does not entirely subside, unless it be far removed from the carious point, and a sinus is formed, extending to the diseased bone, when this purulent fluid often becomes brownish or dark; but although the dressing would occasionally indicate that it became blackish, this is sometimes owing to the dressing containing lead in some form. Around the fistulous opening, fungous granulations are often seen, which bleed

very easily. If we pass a probe into the sanies, it soon comes into contact with a hard rugous surface, and if we press upon it, the probe easily makes its way through it, and gives the sensation of a crepitus; this is a consequence of the breaking down of the lamellæ of the diseased bone. At other times there is no crepitation, the sensation being as if the probe passed into lard. These investigations are rarely painful, but they are often followed by a considerable effusion of venous blood. If the bone be deep, the symptoms are not always so evident; then there is a fixed pain over a bone whose structure is favourable to caries. Abscess may be formed at a greater or less distance from the point, as in psoas and lumbar abscesses. If they give way, or are opened by incision, the pus becomes changed, the system suffers, and hectic may follow: this change has been attributed by some to the entrance of air, but as we considered this point when speaking of abscess, we will not return to it here. Caries may affect several points at the same time, especially when it is of rheumatic origin: we have a patient in the St. Marylebone Infirmary, in whom ten or eleven sinuses exist, communicating with carious bones, and she bears up under it extremely well.

Prognosis.—From what has been said, it must be evident to you that caries is a very serious disease, that it rarely gets well of itself; but it is less dangerous in children than in after life, because, in them, the constitution makes more successful efforts to cure it. When it depends upon physical injury it is often most manageable; when it is too deep seated to admit of direct treatment, furnishes an abundant suppuration, which exhausts the patient, affects the articular extremities of long bones, and affects, at the same time, several bones, it is a very dangerous, and often mortal disease—at least if amputation be not performed; but when it is superficial, not yielding much pus, and affecting the middle portion of long bones, the general health being good, the prognosis is, of course, less unfavourable.

Treatment.—The preceding history of caries affords a very clear indication that, in the treatment, two broad principles are to be kept in view: to destroy the general cause, if it be known, and to act directly upon the affected bone. If the disease depends upon syphilis, scorbutus, scrofula, &c., the internal treatment must be directed to cure them, and the local disease will then occasionally cure itself; but usually it is not so; the exciting cause may be removed, but the local disease may persist, and local treatment may be necessary.

Some years ago Dr. Robert Williams called the attention of the profession to

the hydriodate of potash, as a means of curing caries, whether produced by syphilis or other cause. To a certain extent caries is, no doubt, an evidence of a deteriorated constitution, and probably, when once produced, the state of the bone is very similar, whatever be the cause. In the exhibition of the hydriodate, small doses are useless; for some time I was accustomed to give two or three grain doses, and my opinion of its value was unfavourable; but in doses varying from five to eight grains, three times daily, it will be found in many cases to exercise a very beneficial influence over the disease; I am not, however, prepared to say that the extent of benefit is much greater than we have been accustomed to obtain from sarsaparilla. A combination of both, however, will be found more effective, in a majority of cases, than either separately.

The local treatment must vary with the extent, the situation, and the nature of the disease. If it commence with a hard, deep, inflammatory tumor, antiphlogistics, narcotics, and emollients, are necessary to lessen irritation and pain; poultices and poppy fomentations are often very serviceable for this purpose. When those means have lessened pain and tumefaction, we may apply counter-irritation upon neighbouring parts. When the tumor enlarges, and fluctuation is felt, it must be opened early, to prevent burrowing; an incision should be made on the most projecting point of the tumor; emollients must be applied until the irritation is lessened, and the tumefaction subsides. The opening becomes fistulous, and the sanio-purulent discharge continues. The carious surface cannot cicatrise until it has undergone such a change as will restore to it its ordinary vital properties; this may require destruction of the part, or the substitution of an irritation more easy to cure. Powerful irritants commonly best accomplish this object; how they act it is not easy to explain. In children, when the caries is superficial, good effects are often obtained from baths, to which carbonate of soda, or potash, is added so gradually as not to excite local irritation. Tincture of myrrh, of benzoin, of aloes, camphorated spirit, applied by means of lint, directly upon the diseased surface, often do good. If the disease be deep seated, these means will rarely succeed, and recourse must be had to such energetic means as will destroy the diseased surface, and excite in the adjoining bone healthy action; in fact, convert caries into necrosis. Formerly, for this purpose, mineral acids and caustic substances were applied, and renewed as often as was necessary to destroy the affected portion; but the application of these sub-

stances was found to be uncertain; it was difficult to limit their action to the diseased part; it was impracticable when the bone was deep seated, and particularly when it yielded a large quantity of sanies, which enfeebled the action of these substances. It was, therefore, found necessary to carry out the same principle in a different way—to use the actual cautery, the surest, most expeditious, and most energetic of all the means employed against caries. It acts by destroying the carious surface, and exciting, in the adjoining parts, the action necessary to throw off the sequestrum; the application may be repeated as often as is deemed necessary. When the iron is applied, the bone must be fairly exposed. The cauteries should be of different forms, and should be heated to whiteness; the hotter they are, the more rapid is their action, the less severe the pain: before it is applied, the parts should be made as dry as possible, and the soft parts must be protected. It is usually necessary to employ more than one at a time, because the temperature of the first is depressed by the fungous granulations and fluids with which it comes in contact; and the application should be continued until the diseased surface is black and charred. The action of the cautery upon the affected bone is not very painful. If, after some days, no inflammatory symptoms are manifested at the diseased point—if the fungous granulations are pale and soft—the first application of the cautery was insufficient, and it must be renewed.

When the disease affects a joint, it is hardly possible to determine its extent, and the actual cautery cannot be used, because the consequences of its application would be too serious, and its effects too uncertain. If caries extend deeply into a bone, the diseased portion has been scooped out by a gouge or a trepan, and the cautery has afterwards been applied.

When the disease remains for some time almost stationary, the constitution not suffering, it is often prudent to limit ourselves to absolute rest of the part, cleanliness, and tonics internally; because sometimes, after a while, nature undertakes the cure. When caries affects a joint, the limb should be placed in such a position that if ankylosis occur the limb may be useful. If, on the contrary, the powers of life are suffering, the suppuration becoming more abundant and fetid, hectic symptoms becoming developed, and the loss of life imminent, amputation must be practised as a last resource. Amputation, by removing the source of irritation and suppuration by which the patient is broken down, will frequently, weak though he be, be followed by rapid amendment.

NECROSIS.

We apply the term necrosis to the mortification of the bony tissues: to this condition the term dry caries was formerly applied. Necrosis may result from the spontaneous or mechanical separation of the periosteum from the bone—from a similar separation of the medullary membrane—from death of the osseous tissue itself, or from a combination of all.

It is easy to understand how the destruction of the internal or external periosteum occasions necrosis: the bone receives no vessels except through the agency of these membranes, and the vessels by which the bones are supplied with blood are of great tenuity. When, therefore, by any cause, the separation or destruction of these membranes takes place, the supply of blood to the corresponding portion of bone is cut off, and mortification of an equal quantity of bone follows: to what depth the mortification extends we shall see immediately. The power of nutrition possessed by one and the other of these membranes, is not the same: a much larger quantity of blood is supplied by the medullary than the periosteal membrane. If the periosteum be destroyed, only the more superficial layers of bone are necrosed, while a much greater thickness is destroyed if the medullary membrane suffer; sometimes, indeed, it destroys the whole thickness. Cases do happen where necrosis occurs whilst the internal and external periosteum are intact; from syphilis, scrofula, and other internal causes. How this happens I cannot explain. These several causes act together under particular circumstances. This may happen in a severe burn, under the influence of extreme cold, in gangrene from certain causes, in the fragments of certain fractures.

The appearance of a necrosed bone varies with the circumstances under which it has occurred: if it be a spicula detached in a fracture, it closely resembles a healthy portion, except in colour, which, in place of being a very faint rose, is a dull white. If it follow a separation or destruction of the periosteum to a certain point, it will be similar; but as it often happens that the periosteum has been previously inflamed, if the periosteum has been exposed by one or both surfaces to the contact of pus or granulations, the bone will be sensibly changed in form and polish. Sometimes it is in thin laminae, sometimes in angular fragments; its surface is rough, unequal, and grooved, as if there had been partial absorption. Whether all disorganized parts are capable of being absorbed may be a doubtful question; certainly the appearances may be explained by the mechanical action of the granulations and the sparingly solvent ac-

tion of pus: this would not be absorption, but destruction; and Jobert strongly maintains that in this way the necrosed shaft of the femur may be reduced to the thinness of writing paper. Whatever may be the cause, the sequestrum certainly loses bulk and weight. With regard to colour, it is always duller than the healthy bone, but it may suffer other modifications. Wilson says, necrosed bones are white, if furnished by compact tissues; yellow-brown or black if spongy. Weidmann thought the black colour was owing to the contact of air. A sequestrum will sometimes present an earthy appearance, like that of a long buried bone; but although we may point out the variations in colour, it is impossible to offer any satisfactory explanation of them.

If we subject a portion of necrosed bone to the action of a feeble acid, a soft mass formed of gelatine is the result, whilst the earthy part has been dissolved by the acid.

When a bone has been necrosed in part, or sometimes even in its whole thickness, nature employs several means of cure: she seeks to eliminate the mortified bone, and she rapidly produces a new ossification to supply the loss. These two phenomena we shall examine separately.

The removal of the sequestrum differs with the particular form of the necrosis: if it be superficial, the periosteum having been removed or destroyed, there is no new ossification; or, the periosteum being intact, new bone is secreted, and the old bone is imprisoned, or the periosteum being destroyed, and the medullary membrane having formed new bone, the new bone is incarcerated by the old; but this is a very rare circumstance. If it be superficial, if the periosteum be destroyed, and has not secreted new bone, the removal is very simple: it is often separated in thin laminae; hence the term exfoliation. As soon as a portion of bone is mortified, new activity is developed in the action of the surrounding healthy parts; inflammation, or a state closely bordering upon it, is developed; suppuration takes place in the course of a line which separates the dead from the living bone, and a distinct separation then takes place. When this separation is complete, the dead part constitutes a sequestrum, which is gradually pushed off by the granulations which are developed. In the next case, the periosteum being intact, and having secreted new bone, the sequestrum is imprisoned. The production of the sequestrum is the same as before, but the process for removing it is very different and very wonderful, as shewing the extent of the resources of nature. The sequestrum bathed in pus, pressed upon on the one hand by granulations which constantly

irritated, constantly increase, on the other by new bone, its texture gives way, and certain portions of it are carried away by suppuration. Whether the work of absorption have any thing to do with the process or not, the sequestrum does diminish in bulk and weight, and is loosened in the containing cavity. Arrived at this condition, if the new bone did not prevent, it would, no doubt, be soon expelled: left to itself, however, it may remain a very long time in this state, and profuse suppuration may destroy the life of the patient. In more fortunate cases we find the sequestrum reduced into fragments, which escape through holes in the new bone. Under rare circumstances it is brought about in a remarkable manner, pointed out by Weidmann: the new bone, as yet too feeble to resist the muscles, flexes under their action, and the axis of the holes by which it is pierced is changed, so as to dispose them favourably to receive the extremity of a sequestrum. He saw, in this way, the greater portion of the body of the humerus escape spontaneously; the new bone had been caused by the action of the deltoid.

In a third case, Troja has seen (so has Cruveilhier) the medullary membrane form a bone, which is imprisoned within the old one, the periosteum being destroyed. If similar cases are presented in practice, we are bound to suppose that the old bone is thrown off in fragments; but as I know no certain case of the kind, I cannot say whether matters pass in this way or not.

Every case of necrosis is not necessarily accompanied by the formation of new bone; cases of exfoliation, the periosteum being destroyed, are in point; but if the mortification extend deeply, the periosteum being preserved, as the line of separation is in process of being established, the periosteum begins to be detached; it is red and vascular, it secretes a lymph, which is poured out between the membrane and the sequestrum; this is gradually transformed into bone, which adheres to the healthy bone, at the limits of the sequestrum, which it contains. This tube of bone is never absolutely complete; it contains many holes along its whole extent, which Weidmann termed cloaca. These openings constitute a salutary means of escape for the pus and osseous particles, or even for the sequestrum, when not too large. How they are formed is a debated question; some persons attribute them to the corrosive action of pus upon the periosteum at the commencement of the disease, or at a later period, upon the newly formed bone. Troja thought they were owing to a want of ossification at the points. Others have referred them to suppuration

at certain highly-inflamed points of the periosteum. However formed, they vary in number, in form, and in seat; if the sequestrum be small, there may be only one, if larger, there may be several. Weidmann has never seen more than five, nor Troja more than eight; Berard has seen twelve. They are usually situated towards the inferior, rarely at the superior extremity of the cavity, and their direction is obliquely outwards; they are sometimes round, sometimes oval, and about the size of a common quill. When once the sequestrum is removed, these holes generally disappear.

This invagination may occur in flat bones; they are invested with periosteum on either side, which may secrete bone, and thus imprison the old bone. At Alfort Museum there are three scapulæ in this condition.

I have said the medullary membrane may secrete bone, because Troja and Cruveilhier had seen cases where the periosteum was destroyed, and the medullary membrane had formed a cylinder of bone within the old bone. Mr. Stanley and others deny the possibility; they have destroyed the periosteum, and have never seen the medullary membrane form a new bone. This is no doubt true, and we are bound to believe the positive testimony of Troja and Cruveilhier, which must prevail against negative evidence. Besides, Duhamel, Villerme, and Breschet observed, what succeeding observation has confirmed, the existence of an internal osseous plug in the process of consolidating fracture, which can only be formed by the medullary membrane. I am, therefore, of opinion, that the medullary membrane is capable of taking part in the process of forming new bone.

Causes.—Necrosis may be caused by external or internal agency; it may be spontaneous or traumatic. Among the latter we may place all lesions capable of detaching the periosteum; wounds, contusions, fractures, heat, cold, caustics, and gangrene. In all these cases, it is easy to understand how the effect is produced; the bone is either at once deprived of life, or the vascular connection is cut off. It is not so easy to understand how internal or spontaneous causes act: it is difficult to explain why the same cause, syphilis, for instance, in one case will produce caries, in another necrosis. Again, a wound, with destruction of the periosteum, in a young person, may produce caries, in an adult may determine necrosis. In whatever way they act, the action of internal causes is admitted to be real; syphilis, scrofula, arthritis, and rheumatism, seem to be capable of producing this disease. Again, suppurative periostitis, denudation of the bone by the action of a bad saw, the introduction of a

probe into the medullary canal of a stump, or profuse salivation, may induce necrosis.

Long bones, in the order of the frequency of their suffering from necrosis, may be classed as follows:—the tibia, the femur, the humerus, the lower jaw, the bones of the forearm, the clavicle, the fibula, the metatarsus, and the metacarpus.

Symptoms.—In an early period of its course necrosis may be accompanied by inflammation, which may disorganize the periosteum. Usually the first symptom is a dull pain at a particular point, increased at night if it be syphilitic, or by atmospheric changes if rheumatic. After some time a flat doughy tumor is raised at the point, without any change in the colour of the skin: for some time the evidence of fluctuation is doubtful, but, at last, it becomes very manifest; the skin reddens, inflames, ulcerates, and pus, carrying with it debris of the periosteum, and bone, escapes. If the necrosis be superficial, and there be no obstacle to the expulsion of the sequestrum, it is carried away, granulations are developed, pus lessens, and ultimately the fistulous opening closes. If the necrosis extend deeper, the periosteum being preserved, the progress of the disease will be slower, the symptoms more urgent, the pain will have continued long before any other local symptom will be manifested. An ill circumscribed tumor is ultimately formed, sometimes extending along the whole length and circumference of the limb; it is hard, unequal, doughy, and livid; pressure upon it gives pain, and the bone is evidently much enlarged. Some points redden, ulcerate, and pus escapes; if through one of these openings a probe be passed, it gets into a bony canal; these openings all become fistulous; they are surrounded by fungous granulations, which bleed on the slightest violence; for a time they may close and cicatrize, but easily re-open, close anew, to open again, sometimes after months; the cause being, the irritation of the sequestrum. At the same time the power of the limb is lessened, it cannot be used without greatly increasing suffering. Sometimes the symptoms are slow in their progress and not very pressing, but at others the pain is very distressing, the suppuration is abundant, digestion suffers, the system sympathises, hectic supervenes, and death may follow. The symptoms are much less serious, where the necrosis is a mere exfoliation, than when the old bone is incarcerated; but the violent pain, thirst, sleeplessness, occasional delirium, and almost always abundant perspirations of the latter, are owing to the efforts which nature makes to throw off the dead bone; the irritation, as we have already shewn, being kept up by the dead part being placed between two inflamed surfaces, which it constantly excites.

When by the efforts of nature, or the assistance of art, the sequestrum is thrown off, the new bone is perfectly capable of replacing the other, it receives the insertions of the same muscles, and is moved by them like its predecessor, but at first it is less regular, and what is remarkable, larger in all its dimensions, especially in young subjects; so that the articular extremities are farther apart than they were in the old bone. In a boy of thirteen, the left leg, necrosed, was nearly double the size, and an inch and a half longer, than the right, although previous to the disease of the left, they had the same proportion.

Diagnosis.—It is not difficult to detect necrosis: the heavy fixed pain in the course of a bone, the many small abscesses, succeeded by fistulae, the abundant suppuration, the immature age at which it is often seen, are usually sufficient to enable the surgeon to distinguish between caries, cancer, and necrosis: yet these data are not always enough. A probe passed through one of the fistulous opening, will give to the hand the sensation of contact with a hard, rough body; solid and resistant, if it be necrosis; irregular, soft, and easily perforated, if it be caries: add to this that a sequestrum struck, gives a sharp sound, while, in caries, scarcely any will be elicited. We should not only ascertain if there be a sequestrum, but whether it be invaginated, moveable, in one or many fragments, its depth, its extent. In making this examination, two probes are often useful, for the purpose of moving the sequestrum, which we shall sometimes fail in doing with one: we choose two fistulous openings, at a distance from one another; a probe is passed into one, while percussion is practised with the other. If the disease have existed long, the general disturbance being severe, the local symptoms pressing, the limb large and deformed, the probe, when introduced, penetrating into a rough cavity, where it is as it were imprisoned, it is probable the necrosis is deep seated: as to the extent, it is easily made out by the probe, when superficial; but when deep, we must estimate it by the number and position of the fistulous openings, the distance between them, and the extent of the tumefaction; but all these things will only enable us to guess.

Prognosis.—Of course the prognosis must depend upon the extent, the seat, and the greater or less depth of the disease; its cause, the age of the patient, and his general health. It is seldom of itself a mortal disease; if it be confined to exfoliation, it is not a serious disease; but when deep seated, extensive, occurring in a scrofulous or aged person, it may either primarily or secondarily bring about the death of the patient, by the intensity of the inflammatory action, or by exhausting suppuration; if it extend to a joint, it is a disease of

great severity, because to the necrosis itself articular disease will be added.

Treatment.—There is no disease in which nature has more clearly indicated the means of cure than necrosis: to separate the sequestrum, and, in many cases, to wait until the dead bone is thrown off, is the proper course of treatment. In the last century, the simple, the only remedy for necrosis, affecting the long bones of the limbs, was amputation. We shall soon see that the proper treatment is much more simple; and that amputation should be reserved for extreme cases. In the first place, we should endeavour to neutralize or remove the cause; but, before we exhibit internal remedies, to act upon this cause, it is prudent, in many cases, to subdue inflammatory action at the part. The local indications are, to arrest mortification, if it be possible; if not, to limit it, and favour the removal of the sequestrum. When by a wound a bone has been exposed, the soft parts should be immediately reapplied: if, as a consequence of contusion, blood be extravasated between the periosteum and the bone, or if pus be collected there, so as to separate that membrane from the bone, an incision should be made, to evacuate it, and the lips of the wound carefully brought together; in this way we sometimes prevent necrosis; but if it be established, and an abscess be formed, it should be opened as soon as it is fairly distinguishable; if not, the skin is disorganized, and a good cicatrix is not formed. Usually the opening has not much tendency to close; but sometimes it is necessary to use proper means for keeping it open. When the sequestrum is not thrown off, or when it has kept up such irritation as keeps up profuse suppuration, and endangers life, the indication is, to extract it. At all periods of the disease, antiphlogistics may be necessary, locally, with absolute rest; especially so when it extends to the neighbourhood of a joint, and the patient is threatened with ankylosis. In some vigorous subjects the inflammation is so intense, and the general reaction so great, that general as well as local bleeding becomes necessary; but it must be always borne in mind, that we should do nothing wantonly to lessen the vital powers, which will be sorely pressed when suppuration sets in: if the sequestrum be small and superficial, on the cranium, for instance, it should be extracted as soon as it is sufficiently moveable; it should be frequently moved, by tugging at it gently until it give way. Formerly it was the custom to apply styptics, but in the present day they are discontinued. However, it is always desirable to remove it as soon as possible, because the duration of the disease is lessened, and a cause of irritation and sup-

uration is removed. But when the sequestrum is imprisoned, the case is different; then it is not only necessary to wait until the sequestrum is loose, but until the new bone has solidity enough to resist muscular action, and if it be the leg, to sustain the weight of the body. This does not happen soon; the surgeon should therefore wait, so long as the patient's health does not suffer by the delay: by this course two important objects are obtained; the sequestrum is more moveable, and the cloaca enlarge, or are more numerous. The time, however, comes, when the new bone has acquired the necessary power, the sequestrum is moveable, and it may be proper to take measures for its removal, in preference to abandoning the patient to the inconvenience of an interminable suppuration. If the sequestrum be not sufficiently moveable, we may seek to make it so by traction; when the operation is decided we ascertain the state of the sequestrum, as well as the position of the cloaca; and we begin our operation upon the largest opening which may be nearest one of the extremities of the bone. The part being placed in a convenient position, some persons make a single incision down upon the bone; others make two semi-elliptical ones, which include the line of tissue diseased by fistulous canals; others make a crucial or T incision; the object in each being to expose the bone, so as to ascertain whether the opening in the new bone be large enough to receive forceps, and to allow of the extraction of the sequestrum; if it be not, it must be enlarged by a trepan, a cutting forceps, a strong scalpel, or a saw; even when the opening is sufficiently large, the extraction is often difficult, because of the incarceration, and the irregular shape of the sequestrum, and because its position is unfavourable for making traction upon it. Traction should not, however, be violent, because it may injure the new bone, or break off a fragment, which may be inaccessible, and keep up the irritation. Neither should we remove too much of the new bone; this may be easily done, because its power of resisting traction is often not great. We may, when the opening does not correspond to an extremity of the sequestrum, with a sharp forceps cut through it, so as to facilitate removal. We do not always succeed in removing every fragment at a single sitting; one may be loose, the other adherent; but the removal of one will sometimes free the patient from irritation for years.

Suppuration usually continues for some time after operation; it unloads the neighbouring tissues, and brings away small particles of bone which have been left. The suppuration gradually lessens; the wound is covered with granulations, and a de-

pressed cicatrix follows; this cicatrix corresponds to the point where the new bone was destroyed, and where there is usually no reproduction. The limb must be kept quiet for some time, to acquire the necessary solidity to support the weight of the body, if it be the leg; if this be not attended to, the bones may be curved at the point. Cases will occur where there is profuse suppuration, a bad constitution, and great feebleness, whilst the sequestrum is so firmly fixed as not to allow of our attempting extraction; it is necessary then to look to the strength of the patient; to determine the moment when further delay would be fatal, and decide between it and amputation; and here much experience and sagacity are necessary.

TUBERCLES IN BONE.

That a tubercular condition may be developed in bone was a fact known to Galen (*Nonnulli aut existimant spinam in posteriorem partem perverti ubi in eâ fuerint eruda tubercula, &c.*, *De articularis*) to Marcus Aurelius Severinus (*sed spectatis causis alii gibbi ex casu, alii ex tuberculo &c.*; *De gibbis*, Cap. 2.) to Gerber, who, in a dissertation, published in 1735, shews that their existence was generally known, and considered as the cause of curvatures; to Platner, who, in 1745, published a work (*"Deiis qui a tuberculis gibberosii fiunt."*) How comes it then that ideas so precise as several of these persons possessed on this subject should have been so long lost? It is, I apprehend, because all facts of the science do not, at the same time, make the same progress; the interest of particular questions absorbs at particular times all attention, and other questions are lost sight of; so has it been with tubercles in bone, they have been lost sight of for a century. In 1816, Delpech raised the question, which he conceived to be new; and attention was directed to it; Serres, and Nichet, of Lyons, his pupil, pursued the subject; and the latter, in 1835, published a very important Memoir, founded on seventeen cases of Pott's disease which he refers to the deposition of tubercular matter in the vertebræ. So far as I know, up to the publication of the Essay of Nelaton, tubercles had scarcely been considered in any other light than as occasioning gibbosities; but this is much too narrow a field. In the bone, as in the lung, tubercular matter may be presented under two forms; it may be encysted, or it may be infiltrated; and with respect to bone, at least, this is a point of great importance.

When we examine a fully developed encysted tubercle of bone, we find in the centre of the osseous tissue a cavity, often shut in on all sides, containing an opaque yellowish white matter, inelastic, and pre-

sented no osseous particles; it does not form concentric circles; it is miscible, but not soluble in water; whether this matter be exactly similar to tubercular matter existing in the lungs or the brain, or whether it contains a large portion of phosphate of lime, is yet undecided. This matter is contained in a cyst, which lines the cavity; this cyst is not thick; it is at first gelatinous, transparent, but ultimately acquires considerable power of resistance; its external surface is vascular, and its vessels communicate with the surrounding bone; the internal surface is white and tomentous. The excavation thus formed in the bone may present appendices or openings of communication with other cavities; the osseous tissue which limits these cavities has suffered no very obvious change; the cavity enlarges during the evolution of the tubercle; and if cartilaginous or fibrous matter be met with in its progress, it usually gives way; it often makes way through the intervertebral fibro-cartilage. These tubercular collections vary in extent, from two or three to fifteen or twenty lines in diameter.

When a tubercle is developed in bone, important changes are brought about in the superficial osseous layers, and in the periosteum: they become more vascular in a point corresponding to the deposition, and new bony matter is deposited there; it is in this way that the extremities of long bones often enlarge in white swelling. These tubercles cannot of course be followed, or discovered in their rudimentary state, with the same facility as in the soft tissue of the lungs; it is therefore necessary, if you suspect a bone to contain tubercles, to remove the periosteum, and carefully examine whether the surface contain any vascular points or irregularities; if it do, the compact tissue should be removed with a saw, and the cellular structure cut away with a scalpel; in this way tubercles may be discovered at an early stage of their development. When the tubercles, in the natural course of development, make their way to the surface of the soft parts, the matter is evacuated, and a fistulous communication remains, the fundus of which corresponds to the tubercular excavation in the bony tissue: the parietes of this cavity cannot fall in like those of an abscess in the soft parts, and this disposition tends to keep up the discharge; but gradually the parietes may thicken until they fill up (Nelaton); this is a desirable but not the common termination.

When the tubercular matter is infiltrated through the bony tissue, like water in a sponge, it may be found alone or accompanied by the encysted form; it may be in the form of a semi-transparent deposition in the osseous cells, which a stream

of water does not wash out : these depositions examined through a lens seem to have very delicate vessels ramifying through them. The infiltrated matter may be purulent ; this is distinguished from the former by its dull yellow colour, and by the absence of blood vessels ; this yellow matter is at first firm, gradually softens, and becomes fluid and puriform ; a current of water at this time directed upon it, washes it out of the cells. The absence of vessels is a fact which it is important to note, because it serves to explain certain circumstances in the history of tubercular affection of bones. In the first period of the affection the texture of the bone undergoes little change, but when the puriform condition arrives, the cells are completely obliterated by hypertrophy, under which the part may acquire the hardness of ivory.

All bones or parts of bone are not affected by this disease with equal frequency ; the spongy portions usually suffer. In children, when the difference between one bone and another is not so decided as it is in after life, the bones of the limbs suffer almost as frequently as those of the trunk ; in after life it is rarely seen except in the bones of the trunk. In the long bones the extremities usually suffer ; in the femur the inferior extremity suffers more frequently than the superior ; the contrary happens in the tibia ; in the humerus and the bones of the forearm, the cubital extremity is most frequently affected.

Nelaton classes the bones, as to frequency, in the following order :—vertebræ, tibia, femur, humerus, (in children—phalangeal, metacarpal, and metatarsal bones,) sternum, ribs, and iliac bone, petrous portion of temporal, short bones of carpus and tarsus.

It is most commonly seen in the early periods of life ; Nelaton saw it once in a person of fifty-five.

Both of these forms of disease may be seen in the vertebræ, but the infiltrated more frequently than the encysted ; they may be developed in the bodies or the apophyses, but the first is incomparably the most common. The body of a vertebra may thus be reduced to a shell ; it can no longer sustain the weight of the body, it gives way, and the vertebræ above and below come into more or less complete contact, and a gibbous condition is immediately produced ; union may then take place, and the disease be cured. New tubercular cavities may, however, be formed, and new union may result. A remarkable example of this occurs in the tenth case of Nichet, where the bodies of eight dorsal vertebræ had entirely disappeared ; the second and eleventh vertebræ, which formed the limits of the disease, were united. How, says Nichet, was this brought about ?

I apprehend by a cavity hollowed in a vertebra, being extended in all directions, destroying the fibro-cartilages, and extending to the succeeding vertebræ. Sometimes a hard portion of a vertebra will resist destruction, and keep the parts separated : some persons regard this as a favourable circumstance, whilst in reality it is a serious obstacle to cure : in fact, in these cases, all attempts to oppose gibbosity are decidedly irrational. All our efforts should tend, not to prevent gibbosity, but to suspend the tubercular secretion, the source of all the evil. It is singular, but a happy provision, that the anterior spinal ligament in these cases often becomes ossified, and prevents compression of the spinal cord.

The extremities of long bones may be affected by tubercular disease, constituting, as I conceive, a frequent cause of white swelling ; but the disease may present either of the two forms we have considered. At this time we shall not consider the subject generally, but confine ourselves to the progress of tubercle. When developed in the extremity of a long bone, it is seated not far from the joint, it enlarges and approaches the surface, may perforate the diarthrodial cartilage, may empty itself into the joint, or into the adjoining tissue ; in the former case, acute inflammation may be at once set up in the articulation. In these cases we may see a perforation of the cartilage, without any sensible modification in the cartilage around the opening. Tubercular infiltration may exist in the extremity of a long bone, without affecting the articular surface, but it may be extended to the surface of bone under the articular cartilages. Cartilage disappears by a mechanism probably similar to that of the destruction of intervertebral cartilage. It is evident that there is a striking similarity between the pulmonary tubercular disease and the one we are considering, as respects perforation in the lung : tubercles will perforate the pleura, and produce acute pleurisy ; in the extremity of a long bone it will perforate the joint, and excite acute inflammation there. I shall at present say no more on the subject, but I hope, before long, to shew that tubercular disease of bone is a frequent cause of disease of the spine and of the joints.

EXOSTOSIS.

Under the term exostosis I propose to consider three distinct conditions of bone ; in the first, there is an increase of bulk or density ; in the second, the density is lessened ; in the third, there is at the same time increase of volume. These diseases may affect the whole or only a portion of the thickness of a bone. In the first, be-

sides increase of bulk, there is increase of density, the bone becomes more compact and heavier than in its natural state; this increase may affect not only the spongy but the compact substance; when it affects the compact portion, it is often irregular and tumor-like; when it affects the spongy portion it is more equal. In both cases the periosteum is thickened and injected. We can set no limit to the extent of increase in bulk and density, when the cranium is the seat of the disease. Sandifort describes a curious cranium of this kind in the museum at Leyden. Ribell describes one, which weighed eight pounds and a quarter, the ordinary weight being a pound and a quarter to two pounds; the inferior maxilla alone weighed three pounds and a half. Jadelot found buried at Rheims, a cranium weighing eight pounds, its thickness varying between nine and eighteen lines. Ilg described the head of a young woman who died at the age of 27, which without the lower jaw weighed 120 ounces. All the foramina through which nerves pass were greatly contracted. When cylindrical bones are thus affected, the bones acquire a great increase of solidity. Ruysch speaks of bones becoming solid enough for scalpel handles. Bonn speaks of a femur entirely converted into a solid cylinder. The increase of density in these cases is usually greater than that of bulk. Lobstein took two portions of femur of equal length, and not very different in bulk; one weighed four ounces and a half, the other two ounces. Sancerotte published a case where the increase was general; it was that of a man of 39, who in 1768 weighed 119 pounds; in 1772, although the soft parts did not at all participate in the increase, he weighed 178 pounds. The urine of this man was several times examined, and found not to contain the earthy salts which belong to it.

The new matter, whether developed in the medullary canal or under the periosteum, whether of the size of a pea or that of a human head, sometimes assumes a styloid, a reticular, or a radiated appearance; sometimes it is rough, stalactitic, or cauliflower-like, sometimes it presents areola like the maddrepore, sometimes it is in needle-like points, and sometimes it is smooth. The colour is usually like that of the bone. Lobstein has seen it completely black. It may be developed on any bone, but those of the cranium, the long bones, especially those superficially placed, as the clavicle, the tibia, the lower jaw, the sternum, and ribs, are most frequently affected. In some cases many bones, or even almost all the bones of the skeleton, are affected at the same times. Many examples of this kind are given by Sir A. Cooper and Lobstein.

Both sexes seem equally to suffer; and in each it may be produced by two dis-

tinct orders of causes, internal and external. Van-der-Haar and many others are of opinion, that of these causes syphilis is by far the most frequent; it is in that case a symptom not of primary but constitutional syphilis; gout, as well as scrofula, seem to stand in the relation of causes. It is not very clear that scorbutus or rheumatism has any tendency to excite it; of 500 cases of scorbutus seen by Petit, 100 had caries, but in only four were there exostoses, and of these, three affected the lower jaw. Age seems to have an influence in producing it; it may follow a contusion; but then it is said there must be a tendency to it. Abernethy mentions the case of a young man in whom the tendency was so strong, that the slightest contusion produced it. In such cases, at least, irritation of the periosteum is the immediate cause.

Symptoms.—The symptoms of exostosis vary with the cause. If it be venereal, it is preceded by pain, which at first extends along the whole length of the bone, and is more severe during the night than the day, especially when the patient gets warm in bed; the pain, at last, gets fixed at a point, and there a tumor is developed. When it succeeds to scrofula or contusion, the pain is much less severe; in fact, in many of these cases, the tumor is felt before the pain. The progress of the tumor is very variable; if rapid, the pain is very severe, and can only be calmed by large doses of opium; if slow, the pain may be very trifling. Exostosis may be inconvenient from its size, from its pushing aside, or compressing, neighbouring organs, and, in certain situations, even without great bulk, it may occasion serious functional disturbance; in the vertebral column, it may press upon nerves, so as to occasion paraplegia, or other disease; may press upon, and obliterate arteries, the subclavian, for instance, (Cooper) may press upon the epiglottis, and produce suffocation. (Cooper.)

Diagnosis.—The diagnosis is usually not difficult, when the disease is external and superficial. It is then a hard, inelastic tumor, variable in form and bulk, indolent, not painful, and firmly adherent to the bones; the skin over it, unless much distended, does not change colour. These characters usually serve to distinguish it from periostitis, in which the tumor is commonly pasty, and more or less compressible; still you must be on your guard, for exostosis of the clavicle has been mistaken for a steatomatous tumor; the ligaments and tendons tumefied after a fall, or a luxation, have caused similar error; amputation of the thigh has been performed for a supposed exostosis of the femur, which was aneurism in process of cure. The diagnosis is very important with reference to treatment: we cannot rely on

exostosis being syphilitic, unless it has been some time preceded by primary syphilis, and coincides with other signs of general infection. Some persons, in such cases, refer it to the abuse of mercury. The scrofulous diathesis will equally serve to characterise scrofulous exostosis. Osseous tumors are always comparatively slow in their growth, though in this respect there is a great difference; in one case eight or ten years may be necessary for the tumor to attain great size; in other cases, manifestly syphilitic, in a few months the tumor may acquire its greatest development.

Some persons believe the matter of exostosis to be inorganic, formed by a simple deposit of phosphate of lime, and that, therefore, it cannot be removed; but then every surgeon has known such tumors to be much reduced, if not entirely removed; whether this happens before ossification is completed in them, or not, I cannot say. The osseous tumor may be necrosed, and detached, by a process similar to that of the separation of a sequestrum. (Delpech and Boyer.)

Prognosis.—Left to itself, the prognosis is not very serious, unless it should interfere with important functions. As to treatment, little success can be expected, unless the cause be known, and can be energetically attacked; in syphilitic cases, we have a well-determined means, but even here we often do little more than arrest the further development. It is seldom that it takes a retrograde course; as to ablation, it has succeeded, but we must always apprehend reproduction; a second operation may be followed by a second tumor, (Cooper) or, if the diathesis continue, we may get bone developed in internal organs. (Baillie.)

Treatment.—We must therefore consider the treatment under two different points of view—surgical and medical: the latter must be composed of general remedies, directed against the suspected cause, and topical means to induce resolution. Internal remedies are mercurial, or other anti-syphilitic, antiscrofulous, or antiscorbutic remedies, according to the indication. Where the indications are not clear, we must take the most probable. Sir A. Cooper recommends sudorifics and small alterative doses of mercury, where syphilis is not suspected. Mr. Skey mentioned a case where the tumor lessened during the administration of mercury, the urine being largely impregnated with phosphate of lime. Abernethy tried lemonade acidulated with nitric and muriatic acid, under an idea that he might thus dissolve the phosphate of lime of the exostosis. I know no cases which support this opinion. In the present day, when the disposition to localize the causes of disease is so strong,

there are not found wanting persons who maintain that the cause of exostosis is always local, and therefore limit their means to the local treatment. In cases where the affection evidently succeeds to a cause capable of developing inflammation, as a blow—where the inflammation is manifested by acute pain and tumefaction—it is certainly proper to leech, to cup, and to apply emollients, but you cannot greatly rely on these things; in many cases they only produce a slight alleviation in the symptoms. When the tumor is indolent from the first, or when the pains have diminished under treatment, whatever may be the cause or nature of the affection, recourse must be had to resolvent agents—mercurials, camphor liniments, sulphur or alkaline baths; which, in young scrofulous cases, often succeed well. Cooper recommends blisters, which should be kept open by applying upon them equal parts of mercurial and savine ointment; but their application should be preceded by antiphlogistic means. These local and general means rarely answer the end for which they were employed. Still, until such means have been tried, we do not recur to surgical treatment. If the tumor be indolent, and if it cause no deformity, no operation should be had recourse to; because, when the disease is stationary, it is less serious than the operation necessary for its removal. If it cause pain or derangement in the general health, make rapid progress, or affect a large portion of a limb, amputation or other operation may be necessary. If it be deep seated, palliating means alone can be used. Some persons have attempted to destroy exostosis with caustics or cauteries, but these are dangerous applications, which may substitute necrosis for exostosis. Still, after the removal of such tumors, the actual cautery has been used, to prevent repullulation. Cooper and Wilson give cases of the kind. If the tumor have a small base, the pedicle may be separated by a saw; the soft parts being attached by two semi-elliptical or a crucial incision. As to saws, we must use those which we find most convenient in a given case. After the removal of a tumor, the soft parts are brought together so as to obtain union by first intention.

APOPLEXY (MENINGEAL HÆMORRHAGE) OF NEW-BORN INFANTS.

BY THOMAS H. BURGESS, M.D.

[For the Medical Gazette.]

THERE are two diseases of vital importance to which the new-born infant is peculiarly liable—apoplexy and asphyxia. It would appear, from the re-

cords of medicine, that mistakes relative to these complaints are of frequent occurrence; that apoplexy has been confounded with asphyxia, and asphyxia with apoplexy; and further, that in fatal cases of either, death is often attributed to some vague unmeaning causes, as "feebleness," "congenital weakness," &c. &c.

I have chosen for the subject of this paper Apoplexy, which appears to me to be the most important of the two; and although we might suppose, were we to judge from the scanty records furnished by our own medical writers, that it is of exceedingly rare occurrence in this country, nevertheless, the experience of every intelligent practitioner of midwifery must teach him the reverse. M. Cruveilhier states, he has ascertained, from personal observation, that more than one-third of the infants who die during the act of birth, at the Maternité of Paris, fall victims to apoplexy; and he regards this disease as the most frequent cause of death in all cases of infants who die, either during the process of delivery or within the first few days of their existence*. Some English physicians, however, deny its existence altogether, on no other ground than that of its being (to use their own phraseology) "*quite French*." With such individuals it would be useless to argue. Others, with more liberal feelings, and possessing, perhaps, a greater share of information, as well as of common sense, admit the existence of the morbid condition, and object merely to the *name*. In this objection we partly coincide; but as terms much more dangerous than *apoplexy* have been applied to the disease, in the hope, we presume, of more clearly and accurately expressing its real nature, and as, however loose the term may be, it would be difficult to substitute one more suitable, we have retained it in this paper.

In the eighth edition of Underwood on the "Diseases of Children," we find, at the bottom of page 117, a note by the editor (Dr. Merriman) on the "*Discoloration of new-born infants*." This writer says, "When the *discoloration* is observed before the pulsation has ceased in the umbilical vessels, it *may be useful* to divide the funis, so that the blood passing through the umbilical arteries may be received in a cup

to the amount of two ounces. This, and immersing the child in warm water, offer the most probable means of relief, whenever the *discoloration* arises from a permanent or temporary cause."

When a practitioner of such respectable standing as Dr. Merriman makes use of a term so vague as that quoted in the foregoing paragraph, to particularize an important morbid state, frequently terminating in meningeal and cerebral hæmorrhage, is it to be wondered at that many of our pathological definitions are the *ludibria* of our professional brethren on the other side of the channel? Independent of its vagueness, the name "*discoloration*," as applied to the disease under consideration, is exceedingly dangerous, owing to the fallacious security implied by that term: for instance, in those cases where the disease occurs a few hours after birth, when the infant is in the hands of the nurse. This personage being familiar with the above definition, and interpreting it in its true or literal signification, looks upon the first appearance and gradual progress of the apoplectic hue as circumstances of but little moment: at all events, the "*discoloration*," in her opinion, does not go deeper than the skin, nor does it involve other tissues, and can be removed by heat and friction. Stertorous breathing, frothing at the mouth, prominent eyes, convulsions, and perhaps a trickling of blood from the nostrils, are the first symptoms that awaken her to a sense of danger, and indicate, when too late, the necessity of seeking medical advice!

Before concluding these prefatory remarks, I may mention another pathological condition of great interest, incidental to the same periods of existence as apoplexy and asphyxia. This disease was first described by Zeller* and Michaelis, under the expressive appellation "*Cephalæmatoma*†;" and Val-leix‡ and Burchard§ have recently investigated the subject more fully. Cephalæmatoma has some relationship with the disease under consideration, inasmuch as the origin and development of the one, in many instances, bears considerable analogy to those of the

* De Cephalæmatomate. Heidelbergæ, 1822.

† From κεφαλή, caput, and ἄλωμα, tumor sanguineus.

‡ Clinique des Maladies des Enfants Nouveaux-Nés. Paris, 1838.

§ De Tumore Cranii recens Natorum Sanguineo Symbolæ. 1837.

* Anatomie Pathologique, Livraison xv.

other. According to M. Valleix, the production of cephalæmatomata depends principally upon pressure of the neck of the uterus acting in a certain direction on the foetal head, during its transit from the womb; and Desormeaux is of opinion that the cervix uteri, pressing upon the neck of the infant during the act of birth, is by far the most frequent cause of apoplexy. From these statements it would appear that the compressing agent is exactly the same in both cases. With this inference we must, for the present, rest satisfied, but with the hope of pursuing the inquiry further at a future period; and now we shall proceed to the following case:—

History.—Mrs. A—, having gone a fortnight beyond her time, was safely delivered of a female infant on the 29th of November, at 9 A.M. The labour continued between three and four hours, during which period the pains were severe, and the intervals between each of short duration. An hour elapsed from the dilatation of the os uteri to the birth of the child, and the waters were discharged at least half an hour before that event took place. The head of the infant presented in the way common to natural labour, and descended as far as the cavity of the pelvis, apparently without meeting any interruption in its progress; it was here, however, detained for about fifteen minutes (the pains in the meantime increasing in severity), and was then expelled in the natural way, and without the assistance of the attendant. Immediately on the expulsion of the head from the vagina the infant cried loudly, and continued crying for some moments. A short interval of repose supervened on this stage of the delivery, at the end of which the pains resumed their former severity; and after the lapse of about a minute and a half, or less, from the expulsion of the head, and during the third pain from that period, the body was expelled, and the second stage of labour completed.

The umbilical cord was not entwined around the neck of the child during the process of labour; its position seemed to be perfectly normal; and after the birth of the infant the circulation of the blood through it was found to be carried on without any interruption. About half a minute was allowed to elapse between the birth and the division of the cord; and as the child continued crying during that time, and no untoward

symptoms appearing, it was accordingly deemed advisable to divide the cord without further delay. Immediately after birth a considerable quantity of yellowish ropy mucosity passed from the infant's mouth, and about fifteen minutes afterwards a copious discharge of dark green excrementitious matter, the meconium, came from the bowels; this took place before the child had either taken food or medicine. Within the first hour of the new-born's existence the feet and hands were observed to assume a sort of light slaty colour, which at first sight had more the appearance of the mottled hue of health than that of an abnormal coloration. The colour did not become in the slightest degree darker for at least one hour from the time when it was first noticed, and the child in the meantime appeared lively, partook of its food, and, with the exception of an occasional discharge of mucosity from the mouth, seemed to be going on fairly and well.

After this period the colour of the extremities became gradually darker, the loud cries of the infant already noticed, were now replaced by low and continued moanings, and the mucosities flowed abundantly from the mouth. The nurse administered half a tea-spoonful of castor oil immediately, and had recourse to friction and the warm bath, in order to dispel those gloomy symptoms; but not finding any of the remedies of much avail, and being now apprehensive of danger, she sent forthwith for me. When I saw the infant, the colour of the body throughout was that of a deep blue, with the single exception of the nose, which was remarkably pale and cold. The mucous membrane of the lips and gums partook of the same hue, the mouth was drawn to one side, the eyelids were swollen, the fingers and thumbs were bent inwards towards the palms of the hands, and the little sufferer was moaning deeply.

Judging, from the symptoms now described, that the infant was in an apoplectic fit, I immediately divided the cord and allowed it to bleed. In order to accelerate the flow of blood the child was put into a warm bath, which the nurse kept in readiness by her side. The eyes of the infant were closed, and it appeared quite comatose during the whole of these proceedings; towards the close of them a soft gurgling sound was heard in the throat, for the first time. About

three dessert spoonfuls of blood were drawn from the cord, and as the last was still flowing, a small stream of florid coloured blood appeared trickling down from the right nostril on the upper lip. This was the immediate harbinger of death; for the next moment a convulsive paroxysm ensued, and the infant expired in the nurse's arms.

I may state here, that immediately after death took place, the body became remarkably pale, and the paleness continued for about three or four hours, at the end of which it resumed its former blue colour.

Post-mortem examination 43 hours after death.—External appearances.—Body well developed, and above the ordinary size of new-born infants; embonpoint considerable; colour, dark-blue throughout; mucous membrane covering lips, gums, and mouth, pale blue; nose much paler than the rest of the body; nostrils tinged with blood; superior extremities relaxed; fingers bent firmly inwards towards the palms; chest full; lower extremities slightly rigid; mouth and nares perfectly free from mucosities.

Brain. — Head well formed. On dissecting the scalp from the skull, a large quantity of blood, dark coloured, issued apparently from an emissary vein of the superior longitudinal sinus. Internal surface of scalp emphysematous, highly injected with venous blood (venous injection of an arborescent appearance), and a considerable quantity of serous infiltration was observed between the scalp and pericranium. The pericranium itself was perfectly healthy. The cellular tissue here interposed was also emphysematous: the emphysema appeared in distinct patches, and not throughout. The fontanelles were not prominent*. On dividing the bones, the surface of the brain appeared highly injected with florid blood. The veins took a zig-zag course, and were engorged with dark blood. At the junction of the

anterior and middle lobes (left side), on the external inferior aspect of the brain, a large bleb-like patch was observed, about the size of a five-shilling piece, of serum and dark coloured blood, immediately under the arachnoid membrane, and extending down to the nerves going to the orbit. The membranes were here easily separated from the brain; latter softer in this place than elsewhere; substance of left hemisphere, generally speaking, of the natural consistence; white substance injected throughout, of a sort of palish purple or slaty colour. Left ventricle contained little or no serum, and was slightly injected. Choroid plexus of same side very firm, owing, apparently, to the great engorgement of its veins with dark venous blood.

In the *right* hemisphere and middle lobe a patch was observed beneath the arachnoid of a dark sero-sanguineous appearance, and similar to that noticed in left hemisphere, but extending much deeper into the skull than the former, and passing close by the side of the sella-turcica, instead of going only to the nerves, as that on left side. Right ventricle, much more injected than left, contained no serum. Choroid plexus on right side not so much injected as left, but, at the same time, very dark coloured. Cerebellum highly injected on its surface; of a slaty hue when cut into; firm. Pons varolii healthy and firm. Tubercula quadrigemina *idem*. There was no sanguineous effusion of any importance observed at the base of the brain.

Spinal marrow. — The vertebral canal being laid open from the atlas to the lumbar vertebræ, the spinal marrow was examined *in situ*. Size and consistence normal; a very considerable quantity of dark-coloured effused blood was seen extending from about the second to the sixth dorsal vertebra on the left side, and altogether external to the membranes; the latter were healthy. Right side perfectly free from effusion, and but very slightly injected. The cord was now removed from the vertebral canal, together with the medulla oblongata and inferior part of cerebellum. There was no effusion whatever beneath the cord, and the theca of the canal was not injected; it was shining, and of a light bluish tint. Nothing particular was noticed on making sections of the parts removed: in short, the spinal

* A peculiarity of the cranium of infants, first described by Haller, and recently brought into play by M. Valleix, in his ingenious theory of the origin and mode of production of cephalæmatomata, was here well illustrated. On removing the pericranium from the *parietal* bones, and then gently compressing the latter, minute drops of blood oozed forth by innumerable orifices, diverging in radii from a centre, and finally formed by their union a layer of sanguineous fluid on the surface. Continued pressure of the cervix uteri on the head, will, according to M. V., produce a cephalæmatoma, and the foregoing peculiarity may be regarded as a predisposing cause to that disease.

marrow appeared healthy and firm throughout. The exact quantity of the cephalo-rhachidian fluid was not ascertained, but it appeared, however, to be small. *Chest*: on cutting into the thorax, a layer of fat, more than a quarter of an inch in thickness, was observed between the muscles and skin. Muscles firm and healthy; a large quantity of serum was effused into the cavity of the chest. The lungs contained no more blood than could be accounted for on the principle of gravitation; they were remarkably healthy. The heart and pericardium were also perfectly normal; former contained no blood. Thymus gland healthy. The abdomen was not examined.

OBSERVATIONS.—On reviewing the history of the foregoing case, and the morbid appearances discovered at the autopsy, one or two points in particular appear to me of sufficient interest to merit a few moments' consideration. In the first place, what was the cause of the apoplexy in that instance? secondly, did the post-mortem lesions above noted resemble those usually met with in similar cases? and, lastly, a few remarks regarding the treatment recommended in general in infantile apoplexy.

I. It will be remembered that nothing untoward occurred in the case during parturition by which we might account for the apoplexy; for although the pains were severe, the labour was natural and comparatively of short duration; also that the infant cried loudly on the head being expelled, and again on the expulsion of the body, and before the cord was divided, and finally that the blue or apoplectic hue did not appear for a considerable period after birth. The causes commonly assigned for infantile apoplexy are as follows: Long and laborious labour, especially when the infant is large and plethoric; compression of the head in the passage; compression of the neck by the umbilical cord; employment of the forceps in extricating the head; compression of the neck and cord by the mouth of the womb, or by the external parts; preternatural presentations; premature discharge of the waters of the amnion, &c. Such are the opinions of MM. Lullier Vinslow*, Chambon†, Courant‡, d'Angers, Capuron§,

Desormeaux*, Velpeau†, Billard‡, Valliex, Davies§, and Kennedy||. Two of the principal of the above-mentioned causes, however, are denied by MM. Gardien¶ and Cruveilhier** ; the former will not admit that compression of the cord, however severe, can produce the apoplectic state, and the latter, instead of allowing that the application of the forceps produces the disease, states it as his firm conviction that it is the means of preventing infantile apoplexy from occurring in numerous instances. I confess that I find some difficulty in attributing the apoplexy, in the case just related, to any of the above-mentioned causes. It is true the head of the infant was detained for some short period in the cavity of the pelvis, before it was expelled; but this does not appear to be the cause; and M. Cruveilhier†† observes that although he has seen infants in an apoplectic state at the termination of an ordinary, or even a speedy labour, he has, on the other hand, witnessed cases where the head was retained in the cavity of the pelvis, for twenty-four and forty-eight hours, and even longer, without occasioning any disease‡‡. The same author remarks that in a great number of cases it is impossible to determine the cause of apoplexy occurring in infants during the progress of parturition. In some such instances, (he further observes) perhaps after the discharge of the waters, the uterine contractions keep up a fatal compression on the umbilical cord still contained within the cavity of the womb. This latter, I am inclined

* Dictionnaire de Médecine, art. "Apoplexie des Nouveaux Nés," vol. xv.

† "Traité complet de l'art d'Accouchemens," second édition, vol. ii. p. 544.

‡ Traité des Maladies des Enfants Nouveaux Nés, et à la Mamelle.

§ The Principles and Practice of Obstetric Medicine, vol. ii. p. 1213.

|| Dublin Journal of Medical Science, "Apoplexy, Paralysis, and Convulsions of New-born Infants," vol. x. 1837.

¶ Traité d'Accouchemens, vol. iii. pp. 133, 139, 140.

** Anatomie Pathologique du Corps Humain." Livraison xv.

†† Op. cit. Art, "Considérations Générales sur l'Apoplexie des Enfants Nouveaux Nés."

‡‡ Desormeaux asserts, that the apoplectic state is often renewed, or even developed for the first time, after respiration is fully established; and that he has seen the disease occur without any appreciable cause the day after birth. Vide Dictionnaire de Médecine, vol. xv. p. 153.

Dr. Kennedy ascribes the frequency of apoplexy in the new-born infant to the suddenly altered circulation, together with the loss of balance between several of the most important of the vital organs consequent upon that change.

* Dictionnaire des Sciences Médicales, art. "Apoplexie des Nouveaux Nés," vol. ii.

† Quoted by Gardien in his "Traité complet d'Accouchemens," vol. iii. p. 138.

‡ Ibid. § Ibid.

to believe, was the most probable cause of the apoplexy in the case I have related; and it is hardly worth mentioning, that the ropy mucosities observed in the mouth, &c., if sufficiently abundant, would produce a very different, though important, morbid condition—*asphyxia**.

II. The emphysematous appearance of the internal part of the scalp, and of the cellular tissue immediately beneath it, as already noticed, is not usually met with in cases of infantile apoplexy, and I certainly think it was not a post-mortem effect in this instance. The most constant anatomical character of this disease, occurring in new-born infants, is, according to M. Cruveilhier, an effusion of liquid blood into the cavity of the arachnoid†. The effusion is most commonly confined around the cerebellum and posterior lobes of the brain; it rarely occupies the cavities of the ventricles. M. C., however, met with three cases in which he found clots of blood in the ventricles‡, and he has given a very instructive illustration of the disease, in which are represented the scalp and subjacent cellular tissue highly injected; the cerebellum, and posterior lobes of the cerebrum, surrounded with clots; portions of the dura mater ecchymosed; the bones of the cranium intensely injected; and liquid blood surrounding the spinal marrow, down to the lumbar vertebra. In the case I have related all the lesions were not so strongly marked as in this, although one or two of them were still more so; and, with regard to the effusion into the arachnoid, M. Velpeau observes§, although it is of frequent occurrence, nevertheless, in the majority of instances, the blood either does not

escape from the vessels, or forms but slight ecchymoses. Désormeaux* states that in cases of death from apoplexy of new-born infants, the vessels of the encephalon are gorged with blood; sometimes this fluid is effused on the surface of the meninges, or even into the substance of the brain itself; the lungs are also engorged with blood." The latter lesion, it would appear, is not of constant occurrence, and in the foregoing case the lungs were remarkably free from engorgement; M. Gardien†, however, who says but little regarding the pathology of the complaint, states, in a general way, "that the head and chest are always loaded with blood, and that after death there are frequently found effusions into the skull (*des épanchemens dans le crâne*), as we find in the cases of adults who die of apoplexy." This view of thoracic engorgement he carries into his observations on the treatment of the disease, as we shall presently see. The organic lesions, met with after death in this disease, as mentioned by Dr. D. D. Davis, in his elaborate work‡, differ materially from some of the foregoing, especially from those of Cruveilhier. Having mentioned several of the leading symptoms of a well-marked case of infantile apoplexy, Dr. Davis goes on to say that in such instances we find the vessels of the head exceedingly turgid, and many of them ruptured, and their contents effused into the ventricles, and into different parts of the brain, forming cysts, containing deposits of coagulated blood." Dr. D. does not mention thoracic engorgement as an anatomical character of the complaint.

From the foregoing details, it results, that the principal difference between the lesions just quoted, and those of the preceding case, consists more in locality than in magnitude; as, for instance, none of the authors cited mention the sanguineous effusion having taken place *beneath* the arachnoid, or the engorgement of the choroid plexus, both of which conditions obtained, in this in-

* Vide Boerhaave, Aphorismi, &c. Cap. Morbi Infantum, Aph. 1340, et s. q.

† Path. Anat. "Maladies du Cerveau," pp. 1 and 2.

‡ Op. cit.: vide Livraison xv. plate 1, figs. 2 and 3.

§ Traité des Accouchemens, art. De L'état Apoplectique, vol. ii. p. 555, ed. second.

M. Valleix draws a decided distinction between the apoplexy that occurs in the act of birth, or a few hours subsequent to that event, and that which takes place several days after delivery. Of the latter he gives three instructive cases; but, with regard to the former, he says little, and excuses himself on the score of his not having had an opportunity of seeing any other infants than those that were several days old; "conséquently (adds M. V.) I have but rarely observed the form of the disease described by M. Cruveilhier and others." M. Valleix does not clearly define what he means by a new-born infant. See his "Clinique des Maladies des Enfants nouveaux nés," 1835.

* Dictionnaire de Médecine, vol. xv. p. 154.

† Traité d'Accouchemens, vol. iii. p. 139.

‡ Principles and Practice of Obstetric Medicine, vol. ii. p. 1214.

Billard states, that injection of the meninges, and of the substance of the brain, is so common an occurrence in the new-born infant, that it appears to him more proper to regard them as natural than pathological conditions. See his Traité des Maladies des Enfants nouveaux nés, et à la mamelle. Paris, 1828.

tance, to a remarkable degree; and, on the other hand, the extensive effusion (externally) from the superior longitudinal sinus, must have materially prevented that which took place within the cranium from being so great as it otherwise would have been; thus, as it were, counterbalancing the more loaded, ecchymosed, and injected state of the brain and its membranes, together with the greater effusion into the vertebral canal, noticed by some of the other writers.

III. Whatever discrepancy of opinion may exist between authors, with regard to the causes and morbid appearances of infantile apoplexy, all agree on one most essential point—its treatment; the principal feature of which consists in prompt and speedy blood-letting. M. Savary* thinks it proper to caution the physician from confounding this complaint with asphyxia: he says, “It is very important to distinguish the asphyxia from the apoplexy of new-born infants, as the treatment of one is directly opposite to that of the other;” but I am inclined to think, with M. Gardien†, that the aspect or appearance of the infant will, in general, readily point out the real nature of the disease; for in the latter, to use the expression of the celebrated Baudelocque, “the infant comes into the world *ex sanguine*,” the colour of the body is pale instead of blue. There is another affection—the “blue disease,”—which, in my opinion, is much more likely to be confounded with this form of apoplexy than the foregoing; but the comparative rarity of its occurrence subtracts, in a great measure, from the baneful results that would otherwise accrue from such a contingency.

Notwithstanding the above statements, we have the high authority of M. Cruveilhier that mistakes relative to the identity of those two diseases are of very frequent recurrence. He states, “that in almost all the cases of death at the Maternité, commonly attributed to *asphyxia*, or to *congenital feebleness*, he found the lesions of infantile apoplexy‡.” Suffice it to say, there is but one inference to be drawn from all such mistakes on the part of the attendant—inevitable death to the infant. In the one case (apoplexy), our only chance

of success depends on the immediate extraction of blood; in the other (asphyxia), notwithstanding the assertion of M. Chaussier to the contrary, such a remedy would not only be useless, but according to many would be highly injurious. M. Gardien recommends*, in all cases of apoplexy of new-born infants, immediate section of the cord, or of the ligature, in case it should be tied, as by this means, he says, “you unload the brain and chest, which are gorged with blood;” also leeches behind the ears, gentle compression of the abdomen, and the warm bath, containing a little wine, brandy, or vinegar. Desormaux states†, that in consequence of the torpidity of the circulation in the umbilical arteries, during the apoplectic state, it is with difficulty the blood can be extracted after dividing the cord. In such instances he recommends the patient to be put into a warm bath, and, while in it, the funis is to be constantly expressed from its insertion to where it was divided; and if these means fail, a single leech placed behind each ear will in general suffice: he is likewise of opinion that compression of the abdomen is both useless and inconvenient. M. Velpeau says‡, that section of the cord is the first and principal remedy to be had recourse to, and agrees with Desormaux in stating, that as it is impossible from the outward signs of the apoplectic infant to distinguish, *à priori*, simple congestion from encephalic hæmorrhage, the accoucheur is bound to render the same care and attention to *all* cases, as if they were the worst or most dangerous forms of the complaint. In order to encourage the flow of blood, M. Velpeau recommends, on the authority of M. Champion§, resection of the umbilical cord from time to time, as an adjuvant of much utility. M. Cruveilhier regards all cases of infantile apoplexy as the effects of *mechanical* causes||; and is of opinion that the disease may be prevented in numerous instances by a timely termination of the labour. His remarks on the treatment are entirely prophylactic. He states, that he has seen retropulsion of the cord frequently practised with success at the Maternité, when there was

* Traité d'Accouchemens, vol. ii. p. 140-1.

† Dictionnaire de Médecine, vol. xv. p. 154.

‡ Traité de l'Art des Accouchemens, vol. ii. p. 586-7.

§ Lettre sur l'Accouch. avec sortie du bras. Paris, 1828.

|| Anatomie Pathologique, &c. livrais. xv. p. 2.

* Dictionnaire des Sciences Médicales, vol. ii. art. “Asphyxia des Enfants nouveaux nés.”

† Traité d'Accouchemens, vol. ii. p. 139.

‡ Anatomie Pathologique, livraison xv. p. 1.

danger from pressure on this part. In cases of the presentation of the feet, he says the application of the forceps, after the body is expelled, will frequently prevent death from taking place. Dr. Davis alleges that *two ounces* of blood is the *maximum* quantity to be drawn from the divided cord in this disease*. Dr. Kennedy† recommends leeches to the *fontanelles*, if the funis will not give sufficient blood.

29, Margaret Street, Cavendish Square,
June 2, 1840.

REPORTS OF CASES, &c.

By H. M. HUGHES, M.D.,

Physician to the Surrey Dispensary.

RENAL DROPSY.—ALBUMINURIA.

So much has of late been written upon this affection, that, although it abounds with unexplained difficulties, and therefore offers a fruitful field for pathological investigation, I feel that the observations of one whose attention has not been especially directed to the subject are not likely to present matter either of novelty or of interest; my general remarks, therefore, will be few.

It is now several years since Dr. Osborne asserted it was probable that upon no question connected with pathology had so much and such decisive evidence, direct and confirmatory, been adduced, as upon the general connection of the secretion of albuminous urine with peculiar derangement of the kidney. Since that time this evidence has been immensely increased, both by the original discoverer, Dr. Bright, and by other labourers in the same field, who have recently presented the results of their observation to the profession. Notwithstanding the vast and daily increasing amount of facts adduced in proof, or in support of this connection, there are some who continue to express doubt upon the subject; if they do not as heretofore ridicule the notion of dropsy being connected with, and principally dependent on, disease of the kidneys. Such persons advance, in justification of their incredulity, the fact recognised and acknowledged by all, that albumen occasionally appears in the urine under circumstances in which it seems impossible to believe

that there can exist any permanent derangement of these organs, and a few solitary cases in which after the continued secretion of albuminous urine the kidneys have been found healthy. This and much more may be granted without, I think, affecting the correctness of the deductions, or the truth of the opinions, originally advanced and still maintained by Dr. Bright. The care, indeed, with which the facts and observations were in the first place collected, and the caution with which the opinions founded on them were primarily introduced to public notice, are very obviously evinced by the circumstance that little or nothing, propounded more than twelve years ago in reference to a new and important discovery, now requires alteration or material modification. That albuminous urine may exist without *permanent* derangement of the kidney, is clear from its frequent appearance after scarlatina, and the recovery of persons in whom it occurs. That it may sometimes arise from the morbid state of the circulating fluid itself, appears probable from the escape of various constituents of the blood in sea scurvy, purpura, and other similar diseases. If, indeed, the presence of albumen in the urine may (as in the early stages, at least of Bright's disease, and after scarlatina I imagine it may,) be supposed to depend upon the escape of the serum of the blood from the vessels of the kidney, if it may in some cases be considered to arise from the congestion, dilatation, and consequent thinning of the coats of the vessels of the secreting portion of the organ, it appears at least not improbable that, the state of the vessels being natural, it may also sometimes result from an altered condition, or tenuity of the blood itself—that under some circumstances it may proceed from a change in the fluid *from* which, and in others from a change in the fluid *by* which, the urine is secreted. That albumen may also temporarily exist in the urine under certain conditions of the system, and from causes not ascertained, as in some cases of pregnancy, in persons suffering from salivation, and some acute diseases, without important, or permanent derangement of the kidneys, is not, and has never been, I believe, denied. But that when the urine for a considerable time remains constantly coagulable by heat and nitric acid, when there exists no evidence of disease of the bladder, ureter, or prostate,

* Principles and Practice of Obstet. Medicine, vol. ii. p. 1214.

† See Dub. Journ. vol. x. 1837.

and particularly when the coagulable urine is, or has been, conjoined with a light specific gravity of the fluid, with anasarca and other symptoms of the morbus Brightii, there is abundant cause for believing that the person in whom it occurs labours under some serious functional disorder, if not organic disease, of the kidney, has been proved by observations so numerous as not to admit of doubt in the mind of any whose opinions are founded upon the facts collected by the inspection of the dead, and are not influenced by old prejudices and scholastic prepossessions.

The weight of the immense amount of evidence bearing upon this subject, already collected, is but little affected by the few solitary cases that have been published by Dr. Darwall, Professor Forget, M. Solon, Dr. Morrison, and others, in which "perfect soundness" of the kidneys was found, though albuminous urine had been secreted for some time, and in one case occasionally for *five years*, before death. Such cases merely prove that coagulable urine *may* exist without disease, or such derangement of the kidney as is cognizable by the senses, or at most that it is not universally dependent upon an abnormal condition of these organs.

The advantage of acting on the skin in the treatment of this disease was originally pointed out by Dr. Bright himself, and was subsequently more particularly insisted on by Dr. Osborne. This physician has even stated that when he has been able to produce a healthy action of the surface, he has had little difficulty in removing the complaint, and evidently believes that the disease of the kidney is essentially connected with suppressed function of the skin. Dr. Bright, in a paper contained in the 1st vol. of the *Guy's Hospital Reports*, says, "In almost every case, the first impression that brings on the anasarca is suppression of perspiration; but it is almost as constantly the fact that the kidneys have undergone some previous irritation, and, very likely, that the albuminous urine, in most cases, existed previously to the occurrence of those symptoms, by which it has been recognised, more particularly previously to the anasarca." In the same paper, he says, "The only organ, except the kidney, which I think, on taking a review of the history of this disease, might probably act as a primary cause, is the skin, and this is so closely

connected, in its derangements, with the kidney, that the relations of their lesions, as regards cause and effect, become equivocal." But he afterwards adds, and herein differs from Dr. Osborne, that "we often establish, for many months, the secretion of the skin, while the urine remains albuminous." My own comparatively very limited experience accords generally with that of Dr. Bright. That the suppression of the natural functions of the skin is frequently the cause of the anasarca, I have no doubt. My conviction arises not simply from the fact mentioned by Dr. Bright, but from its reappearance after removal, in consequence of the application of cold; from its cure by diaphoretic medicines, and such other measures as tend to restore a perspirable state of the surface; and from its co-existence with the harsh and dry skin after scarlatina, to which, in a former paper, I have already referred. Cases have, however, occasionally occurred to myself, in which I was unable to detect any other cause for the complicated disease than such as acted on the external surface of the body, and in which the complaint could certainly not be attributed to habitual indulgence in spirituous or fermented liquors, and I have seen a few, though very few instances, in which the coagulability of the urine, together with the anasarca and other symptoms, have ceased when a free perspiration has been established. Whether, in such cases, the disease is cured, or only temporarily suspended, will probably hereafter appear. A principal cause of the generally unmanageable and incurable nature of the complaint, probably consists in the, usually, extremely insidious character of its first stages. Patients, particularly those of the lower order, do not apply for medical advice, till the dropsy, one of the symptoms, and sometimes, by no means an early symptom of the disease, attracts their attention, and till there is often good reason for believing that the affection of the kidney has already existed for several months, or even years. When we are fortunate enough to discover the complaint in its early stages, and when active means are adopted for its removal, I trust there are sufficient grounds for entertaining the hope that it may be arrested in its progress, if not entirely cured.

Of the five cases of which I have some

notes, as occurring under my care, during the past year, two were males, aged 40 and 43, and three females, of the respective ages of 27, 28, and 35. All, with one doubtful exception, had been habitual spirit drinkers at an earlier period of life, though all asserted that they had, for some years, discontinued the practice. The anasarca in four followed, and appeared to have first been produced, by exposure to cold; in the fifth, it succeeded to scarlatina. In two, it was accompanied with hydrothorax; in two, with bronchitis; and in one, with acute dysentery. Three went into hospitals, or passed into other hands, and two died under my care. The history of the two fatal cases is, briefly, as follows.

William Hawkins, aged 40, came under my notice, as a patient of the Surrey Dispensary, Oct. 31st, 1839. He was a steady man, the father of a family, and cook of a Boulogne steam vessel, in which capacity he had, some years ago, drank a great deal of French brandy; but, according to his own and his wife's account, had latterly been tolerably temperate. Six years before, he had fever in India, but was not afterwards troubled with any complaint, till about six weeks previously to his last illness, when he was injured in the back by a fall, the consequences of which confined him to bed for a fortnight; after this, he regained his accustomed health. He had never suffered from cough or dropsy. Three weeks before I saw him he had been confined with scarlatina; the rash was bright and general, but he had little or no affection of the throat. After his partial recovery, he went a voyage to Boulogne, and upon his return was affected with œdema of the face and feet. This was not more than two or three days before he came to the dispensary: general anasarca then existed; the face and surface were pale, the skin hot and dry, without exfoliation; he complained of pain, and tenderness on pressure in the loins; his urine was small in quantity, clear and pale, but strongly coagulable by heat and nitric acid. He had some cough, and complained of tightness of the chest, which, on percussion and auscultation, afforded the physical signs of bronchitis.

Ordered to be cupped in loins to ʒxvj .
and to take Antim. Potassio tart.
gt. 1-3rd, Liq. Am. Acetat. Aq. fontan.

aa. ʒvj . 6tis. horis, et Pulv. Jalap. C.
ʒij. quotidie mane, and to be clothed
in flannel.

He was afterwards bled twice, and diaphoretics, with hydragogues, were continued without benefit. Inf. Digitalis, and other diuretics, were prescribed, and Elaterium administered without effect; and though he was kept in bed with a large poultice on his loins, the skin remained dry, the œdema rather increased, the urine remained coagulable, and the cough and dyspnoea became more troublesome. After six weeks' ineffectual treatment his head became affected; he rambled in his sleep, appeared heavy, and partially comatose; he was capable of being roused, and of answering questions put to him, but soon relapsed into his former lethargic condition, and died, without any decided fit, Dec. 15th. Being myself engaged, the inspection was performed by Mr. Nettlefold, forty-eight hours after death. I was favoured by that gentleman with the following particulars, and an opportunity of myself examining the kidneys. The head was not opened. *Chest*: The right pleura was firmly and universally adherent, and at the lower part the lung beneath it was converted into a firm grey substance, about half a line thick; in the centre of the upper lobe of this lung was an irregular, but defined, hardened mass, of a dark purple colour, as large as a hen's egg (probably pulmonary apoplexy.) It was contained in a cavity with soft, and almost diffuent parietes, which contained no fluid, and appeared not to communicate with any bronchial tube: the other portion of the lung was very œdematous. The left pleura was only partially adherent, but the lung contained a similar dark purple mass, and was, at other parts, œdematous as that of the right side. The pericardium was healthy, the heart large and flabby. The inner membrane of the stomach was dark from congestion, and the liver very large, but not unhealthy in structure. The kidneys were rather large, their tunics strongly adherent, and their surface, besides two or three urinary cysts, presented a very marked granulation, depending upon small rounded whitish masses, about the size of pearl sago. On section, the cortical structure was found thin, irregular from partial contraction, and universally granular;

the tubular portion large, and the parts of which it is composed increased both in size and distinctness.

I have only to remark upon the preceding case, that from the advanced state of the disease in the kidneys, and the usually slow and insidious progress of the complaint, I think there can be no doubt that these organs had been deranged for some months, at least, before the attack of scarlatina.

George Edwards, a large stout man, aged 43, became a patient of the Surrey Dispensary, January 11, 1840. He had, previously to this illness, enjoyed good health, had been occupied as a carter, and accustomed to drink freely, though not frequently so as to produce intoxication. When I first saw him, he had already been confined to his bed for several days with catarrh, the result of cold and wet, to which he was much exposed in his occupation. On my first visit he appeared to be suffering from bronchitis, with some, and not very extensive, œdema of the lungs. There was nothing, however, in the general features of his complaint indicative of more than the ordinary interest of such cases, except the pale and bloated appearance of the face. He complained of cough, and great oppression at the scrob. cordis, and some head-ache. His skin was dry, but not hot; his respiration difficult, and his pulse full and soft. Auscultation and percussion indicated pulmonary congestion, œdema, and bronchitis. The urine was to be saved for examination.

Ordered C. C. Scrob. Cord. ad ʒviii.; Pulv. Jalap. C. ʒss. st. et quotidie mane sumend. Ext. Conii, gr. iv.; Sodæ Sesquicarb. gr. x.; Antim. Potassio Tart. gr. ʒ; Aq. ʒiiss. 6tishoris sumend.

14th. — Oppression of chest much relieved; bowels freely opened; complained, on examination, of tenderness on pressure in the lumbar regions. Skin dry, not hot; urine coagulable by heat and nitric acid; had but little sleep.

C. C. Lumbis ad ʒxij.; Opii, gr. ss.; Antim. Potassio Tartat. gr. ʒ, ft. Pil. hora somni sumend. Rep. Mist. et Pulv.

16th. — Pain of loins on pressure entirely removed. Had no cough, and but little oppression at the chest; urine still coagulable. Ordered to keep his

bed, and to continue his mixture and powder.

He afterwards took a variety of diaphoretic medicines, with hydragogue cathartics, and small doses of tr. digitalis. He was then ordered the less stimulating diuretics, and again returned to the diaphoretics, with a large linseed poultice on the loins, without producing any effect upon the urine. He had been taking antimony and Dover's powder during the day, and gamboge and compound jalap powder every morning, had little or no anasarca, and complained of some sickness from his medicine, but was, in other respects, little changed from his ordinary condition for several days past; when, after the omission of his aperient powder on the preceding morning, and his bowels being in consequence more confined than usual, his fears having been excited the night before, in reference to his children, who had gone to see an illumination, and some anxiety existing in his mind about his club, he was, at 9 A.M. February 11th, attacked with tremors, headache, heat of skin, and "pain of the inside." When seen about 1 P.M. the face was pale, the head and skin hot, the pupils rather dilated and sluggish, the pulse was feeble, frequent, and sharp. He was exceedingly restless, and complained of intense pain of the forehead.

C. C. Nuchæ ad ʒx.; Lotio evaporans fronti appl.; Haust. Cathart. st.; et rep. 6tis hor. ad plen. alv. solutio.

Feb. 12th. — The cupping and cold almost entirely removed the pain of the forehead, and the bowels were freely moved by the aperient medicine, and he appeared as well as usual afterwards; but in the evening he was suddenly attacked with dyspnœa, and afterwards became much excited and very restless, wandering much, and frequently getting out of bed; so that it became necessary to restrain him by force. When visited early in the morning, he was perfectly sensible, complained of no pain in the head, and answered questions directly and distinctly. There was no unnatural heat of the forehead, but the pupils were as the day before, and he was in a state of constant restlessness and agitation, continually changing his position from the erect to the semirecumbent, from the semirecumbent to the erect, or from one side to the other. He complained of

some pain in his left side, but of scarcely any tenderness on pressure; his tongue was pale and moist, his respiration was 60, without perceptible rattle, and his pulse scarcely perceptible. On examination, the whole chest was resonant on percussion, not excepting that part in which he experienced pain. Throughout the entire chest, also, the respiratory murmur was heard pure and distinct; more loud, indeed, than in the healthy adult thorax, and of puerile intensity. No unusual dulness was perceptible in the præcordial region, but the sounds and rhythm of the heart were not distinguishable, in consequence of the frequency and violence of the inspiratory movements, and the patient's great agitation and constant motion. The extremities were cool, the countenance sunk and anxious, but not hippocratic.

Haut. Ammon. c. Sp. Æther. Sulph. C. ʒss. st. sumend. et 3tiis horis repetend.; App. Sinapismus Scrob. Cord. et lateri sinistro.

7 P.M.—He was much the same; perfectly sensible, but still excessively restless and anxious. He had removed from his bed, and sat in a chair by the fire, but had the street-door locked, lest I should find him in that situation. A blister was ordered, and other stimulant medicines were prescribed, but he died an hour after, before either could be obtained.

To what these unusual and suddenly supervening symptoms were attributable, could not unfortunately be decided, as he left a dying request that no examination should be permitted. I have occasionally seen similar results produced equally suddenly by œdema of the lungs, but the existence of this condition was disproved by the auscultation and percussion. Might the symptoms arise from a defined local *phrenic* pleurisy, or were they produced by a fibrous concretion in the heart?

I had intended to have added another case of acute anasarca, accompanied with coagulable urine and acute dysentery; but my notes of the case are not at present by me: I shall, therefore, defer noticing it till I add a few remarks to those I have already made* on the disease last mentioned.

* MEDICAL GAZETTE, December 20th.

MR. OWEN AND MR. NASMYTH ON THE TEETH.

To the Editor of the Medical Gazette.

SIR,

I ESTEEM it a fortunate circumstance to have seen your journal of Saturday last in time to put a stop to some proceedings, of which you will understand the nature from the subjoined letter, which I have addressed to the Secretary of the British Association, relative to the charge of plagiarism which you have preferred against me in your review of my work entitled "*Odontography*," &c.

London, June 10th, 1840.

My Dear Phillips,

It has been more than once objected to the publications of the British Association, that the communications, of which abstracts are given in the annual volume of Transactions, are not always remarkable for novelty; nay, that sometimes injustice has been done to able foreign Scavans by the silence with which their discoveries, broached at our Sections as novelties, are passed over. I do not write to call your attention, on this account, to Mr. Nasmyth's able memoir on the Cellular Structure of the Ivory, Enamel, and Pulp, of the Teeth, communicated to the Medical Section, (August 29th, 1839); but pray compare what he now proposes to print in the forthcoming volume of the Transactions, as the memoir communicated by him in August last, with the abstracts of that memoir printed in the *Athenæum* (No. 620, Sept. 14th, 1839), and *Literary Gazette* (Sept. 21st, 1839). I was, unfortunately, unable, as you are aware, to attend the Medical Section when the paper was read, and am, therefore, acquainted with the discoveries and opinions it contained only by the abstracts above quoted.

I subsequently communicated to the French Institute a memoir on the Development of Teeth, of which an abstract was published in the "*Comptes Rendus*," for December 16th, 1839, and a succeeding number. I have been charged by the Editors of the *MEDICAL GAZETTE* and *Lancet* with having plagiarized my theory of dental development, and the facts on which it rests, from Mr. Nasmyth's memoir read at Birmingham in August last; and this accusation, besides deriving plausibility

from the stale trick of passages parallelized by means of mutilation, is likewise, and mainly, supported by quotations from Mr. Nasmyth's memoir, in the eighth volume of the Transactions of the British Association!

I would suggest that when an author has not, at the period of reading his memoir at a sectional meeting, deposited the same, as read, in the Archives of the Association, the secretary should exercise a discretionary power, with respect to the admittance into the Transactions of a memoir or abstract, which may materially differ from the original communication, or its abstract printed in the *Athenæum*, *Literary Gazette*, or other journals which report the proceedings of the Association; otherwise a grievous injustice may be done to other inquirers, whose works may appear between the periods of the meeting of the British Association and of the publication of the volume of the Transactions of that meeting, by an apparent anticipation of their discoveries; and an envious or malicious person may add to that injustice a plausible but false accusation of plagiarism.

I have not seen the memoir or abstract which Mr. Nasmyth has transmitted for publication in the forthcoming volume of the Transactions; but the attack to which I have alluded, and the mode in which it is supported, lead me to anticipate a difference between it and his memoir of August, which, while doubtless originating in a natural desire on the part of the author to render his memoir, as printed in the forthcoming Transactions, not below the present state of science, has given occasion to its being made an instrument of attack on the real author of its improved condition.

To defend myself, therefore, from the imputations of the editors of the London weekly medical journals, I am obliged to request that you will direct Messrs. Taylor to send me a proof of Mr. Nasmyth's memoir, as now prepared for publication, in order that I may be able to point out the interpolations, additions, or omissions, which may convert the differences between Mr. Nasmyth's August communication and my December memoir into correspondences.

To give you an idea how easily, though doubtless unintentionally on Mr. N.'s part, this may be effected, I shall observe that my observations on dental development, and the theory

founded thereon, while they indicated the amount of analogy and the characteristic differences between the modes of formation of ivory and bone, were subversive of the prevalent doctrine, that the ossific matter of the tooth was deposited in thin layers on the surface of the pulp, a doctrine based upon the well-known facility with which these layers can be detached. Indeed, I expressly deny that the surface of the pulp is formative, in the sense of producing the ivory which is in apposition to it.

Pray observe, therefore, whether Mr. Nasmyth retains in his memoir (quoted by my accusers from the *Transact.* of the Brit. Assoc. vol. viii.) the following passages, which you will find in the abstracts thereof furnished by him to the *Literary Gazette* (Sept. 21st, 1839,) and *Athenæum* (Sept. 14th, 1839.)

"When merely a thin layer of ossific matter has been deposited on its (the pulp's) surface, it may, with great facility, be drawn off entire."—*Lit. Gaz.* p. 578.

"The formative surface of the pulp, which is in apposition to the ivory, and by which the latter is produced, he described as presenting a general cellular arrangement, which he denominated reticular, resembling a series of skeletons of a desiccated leaf."—*Athenæum*, p. 707. It might be contended—for it must be confessed that the cuttle-fish scarce more effectually conceals its body, by scattering abroad its ink, than does Mr. Nasmyth his meaning by a similar process—that the mode of production here meant by Mr. Nasmyth, was that which I subsequently described in December, viz. by *conversion of the pre-existing and pre-arranged cells in the substance of the pulp*, instead of by evolution from its reticular surface. See, therefore, whether he still retains the following statement, which expresses his notion, in August last, of the mode of formation in question. "Mr. Nasmyth is of opinion that, from the spirally fibrous frame-work of the reticulations are evolved the spiral fibres of the tooth."—*Athenæum*, p. 707. Again if the passage—"A comparison between the superincumbent perfect ivory, and the formative surface of the pulp beneath, is always easy"—*Lit. Gaz.* p. 599—be retained in the memoir, as it is about to appear; observe whether the word *formative*, as applied to the surface of the pulp, be now omitted in that passage: because, in order to make Mr. N.'s me-

moir 'on the Cellular Structure of the Teeth,' as read in August last, consistent, as regards the theory of the formation of ivory, with mine 'on the Development of the Teeth,' as published in December last, as well as with itself, as improved by the new paragraphs, quoted by my accusers, to support their charge of plagiarism—the statements in the original memoir, to which I have drawn your attention, upholding the old doctrine of dental development by thin layers of ossific matter, successively *evolved from, or deposited on the formative surface of* the pulp, and those other statements which expressly deny, or imply the negation of, the formation of ivory by ossification of the pulp, and indeed the whole, or nearly the whole, of the speculations on dental development, contained in the first and second columns of the Literary Gazette, p. 598, must be omitted, and other statements substituted.

Not, however, to tax your patience with more of these physiological subtleties, I may simply state that the aim of my researches, communicated to the Institute, was so far different from those I am accused of plagiarising, that whereas it was neither to controvert nor confirm the cellular structure of the ivory, as described by Retzius,* it bore directly on the establishment of a true theory of its development, and this theory my observations enabled me to propose with confidence. Now the main object of Mr. Nasmyth's investigations on the microscopic structure of the

teeth, communicated to the British Association in August last, was to prove the cellular structure of the ivory; with regard to its mode of development he expressly states, "that the researches which he has made on this point are, as yet, imperfect."—Lit. Gaz. Sept. 21, p. 597. And the Athenæum reports, "that with respect to the formation of the ivory, Mr. Nasmyth stated that he was not prepared with a satisfactory theory." (No. 620, Sept. 14, 1839.) It is in accordance with these admissions, and with the evidence of Mr. Nasmyth's leaning to the old doctrine of the deposition of the ivory in thin ossific layers, or any other form, upon the formative surface of the pulp, contained in the passages which I presume may be possibly omitted in his forthcoming memoir, that the accomplished translator of Müller's Physiology (loc. cit. p. 431)—when he states that "The observations of Purkinje, Raschkow, and Schwann, respecting the mode of formation of the proper dental substance, have not yet completely elucidated the subject"—does not refer to any subsequent discovery, in Mr. Nasmyth's communication to the Brit. Association in August, 1839, tending to such desirable additional elucidation; whereas that communication, if it had anticipated, as the editors of the Gazette and Lancet affirm, all that I claim as original in my December memoir, would unquestionably have afforded important additional, if not complete elucidation, of the nature of that interesting process."

And here, Mr. Editor, allow me to suggest to such of your readers as may not be disposed, either through your, or my equally strenuous recommendation, to compare the abstract of my memoir in the Comptes Rendus, with that of Mr. Nasmyth, in the Athenæum and Literary Gazette, in quest of scientific analogies or otherwise, to turn to Pt. I. of Dr. Baly's Müller, 2d edit. pp. 427-431, published in October, 1839: this excellent work I presume to be in the libraries of most, if not all of your readers; and, with the evidence they will there find of the disposition, on the part of the learned translator, to do justice to the discoveries of his countrymen, I would ask, if they can conceive it possible that Dr. Baly would omit all notice of the laborious and ingenious microscopic observations, of the apt selection of appropriate subjects for yielding the required results, which convert a previous probability of

* "In our best English work on Physiology you will find the following passage: 'M. Retzius has discovered that the tubes in their course from the cavity of the tooth to the external surface of the ivory, branch by dichotomous division, and give off numerous side twigs, which ramify in the intertubular spaces. Some of these twigs terminate in small cells filled with calcareous matter, and very similar to the corpuscles of bone. In the human teeth these cells are very minute, and difficult to discover; but they are distinct in many mammalia, as, for example, in the horse (fig. 41.)' Baly's Translation of Müller's Physiology, 2nd Ed. Part I. p. 427. Dr. Baly adds, 'In the Report of the meeting of the British Association in the Athenæum, No. 620, Mr. Nasmyth is represented as stating that the intertubular substance of the ivory is not structureless, but distinctly cellular.' And he might have added, that Mr. Nasmyth, instead of citing Retzius' beautiful observations, anticipating his alleged discovery, likewise asserted 'that the interfibrinous substance of the teeth had been improperly described by modern anatomists as presenting no traces of peculiar conformation.'—Lit. Gaz. p. 601.

"If this statement be retained in the account of the alleged discovery of the cellular structure of the intertubular substance transmitted for publication in the forthcoming volume, it ought, in justice to Retzius, to be omitted."

the development of ivory, by intus-susception, or conversion of pre-existing and pre-arranged pulp-cells, into certainty? And that he should have passed over, in silence, a theory which, while it enunciates the resemblance between dentification and ossification, at the same time defines the nature and amount of the differences in these processes? Yet such must have been the flagrant injustice committed by Dr. Baily on Mr. Nasmyth, if the memoir from which the translator of Müller quotes Mr. N.'s alleged discovery of the cellular structure of the intertubular substance of the ivory, likewise anticipated, as you assert, "all that Mr. Owen claims as original," or "contained," as the editor of the *Lancet* affirms, "*every fact which Mr. Owen announced to the Institute of France, as his own discovery!*" That Mr. Nasmyth's memoir, when it is published, may contain any or every discovery in dental anatomy, which I have made, and made public, would not surprise me; their adoption by careful and industrious investigators will be my best reward. But to return to the letter, by which I trust to prevent this being done for the purpose to which you have applied it. "Since, however, the editors of the *Medical Gazette* and *Lancet* avail themselves of the version of Mr. Nasmyth's memoir of August last, as it is designed to appear in the 8th volume of the *Transactions of the British Association*,—nay, even quote that volume, in order to brand me plagiarist, as if such a work were in existence—it seems to me to be not an unreasonable request that you will restore in the memoir, of which you superintend the publication, those passages, the omission of which would enable the editors of the *Lancet* and *Gazette* to give a colour to their accusation.

"But, as you may anticipate, some interpolations, as well as omissions, in the memoir in question, are necessary to establish the alleged conformity between it and mine. Take a sample: Mr. Nasmyth is reported in the *Literary Gazette* (loc. cit. p. 598) to have said in August last, "Schwann regards the dental substance as the ossified pulp, whilst Mr. Nasmyth's observations lead him to conclude that the cells of the ivory are altogether a distinct formation."

The observations subsequently published by me have, as I believe, fully established that which Schwann's re-

searches left as a matter of probability only, and which Mr. Nasmyth's researches, up to August last, lead him to deny. But the Editor of the *MEDICAL GAZETTE*, to prove the theft, for which I should have richly merited the characteristic blackguardism heaped by his brother editor of the *Lancet* upon the hypothetical plagiarist, quotes the following passage from the new memoir:—"In Mr. N.'s own report, given in the *Transactions of the Association*, which has been printed separately, and a copy of which is now before us, we find it stated, 'that the ivory is neither more nor less than the ossified pulp, and that it can in no wise be regarded as an unorganized body.'"

The reader is left to draw one inference from this statement, which I wish, for your sake, were true, viz., that a copy of the *Transactions of the Association*, vol. viii. were in any body's hands; but I fear that some time must still elapse before you can have the pleasure of announcing its publication.

I am, sir,
Your obedient servant,
RICH. OWEN.

To Prof. Phillips, F.G.S.
Sec. Brit. Association, &c. &c.

Having, Mr. Editor, in the preceding letter, disposed of the evidence which you adduce from Mr. Nasmyth's Memoir, in an unpublished volume of the *Transactions of the British Association*, in proof of my plagiarism of his Memoir of August last, I next proceed to prove that the charge of injustice to recent writers, which you rest upon paragraphs of my own works, can be supported only by wilful mutilation of such paragraphs, accompanied by a false statement, which the part suppressed would have exposed.

The false statement is, that Mr. Owen claims to have 'discovered the organic nature of the ivory:' * the proof that your statement is false is afforded by the portion of the paragraph of my memoir following 'membrane glandulaire,' which you have, therefore, purposely omitted; this omission I now supply. After the word 'glandulaire,' I proceed to say, "Telle est la théorie proposée par Cuvier, et par ses savants continuateurs, dans la seconde édition des *Leçons d'Anatomie Comparée*. (Tome iv. 1re partie, p. 197). La même opinion se trouve reproduite tout récemment par M. de Blainville, dans sa magnifique *Ostéographie*; et le profes-

* MED. GAZETTE, No. 37, p. 438.

seur Müller, tout en reconnaissant, avec la profondeur de science et la perspicacité qui la distinguent, la nature plus compliquée de la substance dentaire, telle que l'ont démontrée les recherches de Purkinje, de Fraenkel, et de Retzius, regarde pourtant encore les dents comme formées, ainsi que les poils et les ongles, par une exsudation progressive de couches fournies par un bulbe sécréteur." — *Comptes Rendus*, Dec. 16th, 1839, p. 784.

Now every anatomist knows that Purkinje discovered the fibrous texture of the ivory; that Müller proved the fibres to be tubes, as Leeuwenhoek had originally stated them to be; and that Retzius detected the cells of the inter-tubular substance.

Those recent authors alone, therefore, *who have enuniated in general propositions the results of observations extended over all the vertebrate classes*, as Cuvier, De Blainville, and I might have added Wagner, Carus, Della Chiaje, &c., were said by me to have described the ivory as inorganic, in the sense you use that word, viz., as being devoid of a cellular, fibrous, or tubular structure. In order to prove this statement of mine to be inaccurate, you resort 'to the simple method of juxta-position;' and again quote from my Memoir in the *Comptes Rendus*; but you quote (at p. 439) the same passage which you quoted before (at p. 438)—with a difference; *then* the last half was truncated, *now* the editorial shears excise my specific character of the latest authors who have described the teeth as inorganic; and you pass from 'développement des dents,' to 'les ont décrits,' &c., as if they were continuous in the original; omitting the intervening sentence, beginning with 'et qu'ont resumé,' and ending with 'mammifères.' Is it thus that you aim at persuading your readers that I have unjustly suppressed all mention of the estimable authors, as Retzius and Mr. Nasmyth, who have described the cellular structure of the teeth, in order to appropriate to myself the credit of this discovery? You are, doubtless, well aware of the meaning attached to the word 'organic' by many physiologists, especially of the French and German schools:—many mineral bodies are cellular, some, as asbestos, are fibrous, a few are tubular: these modifications do not necessarily, therefore, prove a body to be organized. The profound Müller uses the term 'unorganized'

as applied to the teeth, in the sense of their being developed by a process of excretion or evolution from the formative surface of a pulp, of their being simply in apposition with that surface, and of their being incapable of a growth when once formed. Now I have shewn that, if any theory of the formation of ivory can be gathered from the observations in the *Literary Gazette* and *Athenæum* of Sept. 21 and 15, it is essentially the old theory mentioned by Müller;—whether the ivory be evolved from the formative surface of the pulp, and be in simple apposition thereto, in the form of 'thin ossific layers,' 'spiral fibres,' or cells,' does not signify.

My theory maintains that the strata of tubes and cells, successively developed in the formation of ivory, are due to a conversion, according to certain laws, of the substance itself of the pulp, and that each new-formed stratum is not merely in apposition to, but in organic connection with, the uncalcified pulp. In August last, (according to the *Lit. Gaz.* l. c. p. 598) Mr. Nasmyth denies that the dental substance is the ossified pulp; in the report published in your journal a contrary opinion is put forth. Permit me to add to your reference to that report, (at p. 439 of No. 37) an element not usually omitted in quotations made with a view to a charge of plagiarism, viz. the date: it is not every reader who would intuitively calculate that your p. 538 of vol. xxv., was published January 3rd, 1840, just in time to admit of my memoir of December 12th, 1839, being carefully read and digested. When the difference between the theory of January, 1840, "that the dental substance is the ossified portion of the pulp" (*Med. Gaz.* l. c. p. 541) and the emphatic statement of September, 1839, "that so far from being the ossified pulp, it was altogether a distinct formation," (*Lit. Gaz.* p. 598,) was pointed out to me by a friend—whose disposition is the very antipodes of impudence and duplicity—and who, suggesting the possible source of the striking change in Mr. N.'s sentiments on this subject, was indignant at the effrontery of the statement that the abstracts of September 21st, 1839, and of January 3rd, 1840, maintaining theories diametrically opposed to each other, were abstracts of one and the same memoir, read August 26th, at Birmingham,—I replied that, so far from being annoyed, I felt gratified at

having been able so to state my case, and expound my evidence, as to have produced such a complete and sudden conversion in the sentiments of any physiologist; that I thought it a most singular example of plasticity of mind, and uncommon power of rejecting preconceived notions, this sudden change of Mr. Nasmyth's; and that as he had done me the honour to adopt my theory, it was so far his own, and he was welcome to it.

With respect to a satisfactory theory of dental development, the observations made by Purkinje, Raschkow, and Schwann, had not yielded the desired elucidation; nor is it to be wondered at, when they were confined to the teeth of the mammalia. My habitual studies in comparative anatomy enable me, after many abortive attempts to detect the mode of development of the ivory in the higher class, to select a fitter subject, perhaps the most appropriate, for these delicate and difficult investigations. The teeth of the foetal shark (*carcharias*) are flat, and so thin as to allow sufficient light to pass through them to demonstrate their structure under very high magnifying powers: their beautifully gradational development in each row, from the primitive papilla to the completely calcified pulp, offers to the observer all the requisite stages of the process; the great number of these vertical rows, exceeding a hundred in each jaw, yields him abundant opportunities of repeating and varying the mode of his investigations.

You will have observed, Mr. Editor, in the number of the 'Comptes Rendus' from which you quote, in your review of my Odontography, that only the chief results or conclusions of my investigations are there printed; but I can assure you, and I think your readers will credit me, that none of the numerous details, there omitted, of the difficulties as they arose, and the processes by which they were met and surmounted, in the course of my inquiries, were plagiarized, any more than the theory they substantiated, from any previous publication.

And, finally, Mr. Editor, with respect to your assertion that my Treatise on the Comparative Anatomy of the Teeth "differs from the ordinary run of books"—as you elegantly express it—inasmuch as it is a Descriptive Catalogue of the Hunterian Collection.

I trust that the five quarto volumes

of that Catalogue, which I have had the honour to complete, 'do differ from the ordinary run of books;' and that the same may be said of the Descriptive Catalogue of Osteological and Dental Preparations, which was entrusted to an officer of the College of Surgeons, now, alas! no more. But I should allow a great injustice to be done to the learned directors and curators of the Museums of Paris, Leyden, Utrecht, and Frankfurt, and of the London Zoological Society, were I not, after such an assertion, to anticipate so much of the general Introduction to my Odontography, as to acknowledge that by far the greatest part of the dental organs of the rare fishes described in the published portion of my work, was liberally submitted to my examination and my draughtsman by those gentlemen during my visits for that purpose to their respective collections.

The skeletons and dental preparations of fishes in the Hunterian Museum, are, as yet, few, in comparison with the vast collections of them for zoological purposes in the museums above mentioned: but they have been systematically arranged, openly displayed, and described in a published catalogue, ever since the College Collection was in its present edifice. With respect to the few dental specimens therein contained, which I have found requisite to describe and figure, as, *e. g.* those of the *Diodon*, the most liberal permission was granted to me for that purpose by the Museum Committee. These, and all similar aids and facilities afforded me in the course of my work, which my spirited Publisher has enabled me to bring out, will be, not less than the discoveries of my predecessors, duly acknowledged in the proper place.

I am, sir,

Your obedient servant,

RICHARD OWEN.

June 12, 1840.

[Our giving immediate insertion to Mr. Owen's communication (which we have done at some inconvenience) will, we trust, be received as proof of our wish to do him justice by letting both sides be heard. As to the rest, we leave it for our reviewer to speak for himself in reply, when he has seen Mr. Owen's answer, and which he will do only in common with others, when it meets the public eye.—Ed. Gaz.]

CARTILAGINOUS TUMOR.

To the Editor of the Medical Gazette.

SIR,

IN a report of the pathological department of the Medico-Chirurgical Society, in your number for June 5th, Mr. Charles Hawkins is said to have described a cartilaginous tumor, which was found lying loose in the peritoneal cavity. I have no doubt of the correctness of his conjecture, with regard to its origin, that it had, at first, been a growth from the inner surface of the abdomen, which subsequently became detached. I believe that such tumors originate in the subserous cellular tissue, that then the serous membrane gradually becomes elongated, and at length gives way, so that the tumor becomes loose. Of course those formed in serous and synovial cavities must be of the same nature, and formed in the same way; we have so many proofs of the near relationship of these two kinds of sacs.

Mr. Syme, in his *Surgery*, states, as the most probable account of their origin in the knee, that they are growths, broken off from the edges of the semilunar cartilages. Those which have been found in the ankle, the shoulder, the elbow, and the twenty met with by Haller, in the articulation of the lower jaw, could not have had such an origin, because, in the first three joints, there are no moveable cartilages, and in the last they were collectively larger than the whole interarticular cartilage. We must, I think, believe that they are formed in the same manner as the intra-peritoneal cartilages.

I have, in my museum, a preparation of a testicle, which strengthens this view of their origin. Under the tunica vaginalis testis, and in the thickness of the tunica albuginea, is a small, hard, cartilaginous growth, about the size of a millet-seed; another, about the size of a grain of barley, was lying, quite loose and unattached, in the cavity of the tunica vaginalis. There was no thickening, or other alteration, of this tunic, or of any other part of the testicle, and no collection of fluid in the serous bag. The preparation is worth keeping, because it shows the two cartilages in two different states, attached and loose, the one being the antecedent of the other.

This accidental formation appears to

be rare in the testicle, as no mention is made of it in Cooper's Dictionary; the only ossifications mentioned there are those in the form of bony plates. Are not the phlebolithes described by the French pathologists, of which I have met with several specimens in the interior of hypogastric veins, formed in the same way, by the ossification of portions of lymph, either attached inside the venous membrane from the first, or first outside of it, and afterwards elongating and rupturing it?—I am, sir,

Your obedient servant,

JAMES DOUGLAS,

Lecturer on Anatomy.

235, George Street, Glasgow.

June 9th, 1840.

ON

CONGENITAL PECULIARITY IN
THE STRUCTURE OF THE HEART.

To the Editor of the Medical Gazette.

SIR,

SHOULD you deem the accompanying hints worthy a place in your interesting GAZETTE, I shall feel obliged by their insertion.—I am, sir,

Your most obedient servant,

C. M. DURRANT, M.D.

Ipswich, June 10, 1840.

In attending to diseases of the heart, whether organic or merely functional, the fact that the changes arising from natural structural peculiarity may, and often do, produce many of the physical signs of real disease of the organ, cannot be too strongly impressed on the attention of the observer; since an error thus made in the diagnosis tends to throw discredit on auscultation, and is one indeed into which professed and practised stethoscopists have not unfrequently fallen.

This condition simulating disease may arise either from the natural conformation of the individual, or from the normal peculiarity in the structure of the heart itself.

With the first may be included sex, age, and the formation of the thoracic parietes as regards development. On these points it is sufficient to premise, that the sphere of sound is naturally much more extended in young persons, and females, especially if the latter be

lean, have small breasts, and narrow meagre chests; in such, the apex of the heart often strikes with force against the parietes of the chest, and is productive of an unpleasant jerking sensation, often causing great, although happily groundless alarm, in the minds both of patient and friends.

In examining, pathologically, the hearts of women and children, the parietes will be found thinner, and the cavities more capacious, in proportion to the size of the body, than in adults of the male sex. Again, in those with a large thoracic cavity, having thick muscular or fat parietes, the extent of sound is much diminished, often heard indistinctly, even within the prescribed limits. It will not be foreign here to remark that the average extent of dull sound, elicited by percussion, over a well-proportioned heart, varies from one and a half to two and a half square inches, the remainder of the organ being covered by lung.

The natural thickness of the cardiac parietes, as well as its tonicity of fibre, varies considerably in different individuals; the strength of the heart's impulse being in direct ratio to the same. The heart is generally naturally large in those with capacious chests, especially in males with great muscular development; the contrary is usually the case in lean individuals, with a weak and flabby state of the muscular system; in the former, the impulse will be considerable, but the sound limited, while the reverse will occur in the latter peculiarity. When the parietes of the heart are naturally thick, the impulse will be found prolonged and sluggish; on the contrary, when the walls are normally thin, and the general capacity of the organ diminished, the stroke will be rapid and abrupt.

In cases of precocious puberty, especially if connected with early excesses, particularly in reference to the generative function, the heart is extremely liable to become enlarged to a certain extent, and thus remain, without farther increase, and unproductive of serious consequences, provided the exciting causes be abandoned. The above excesses are a far more fruitful source of enlarged heart, in both sexes, than is generally supposed, and if persisted in, organic disease of the viscus will be the inevitable termination.

Cases in which the heart is naturally

large in proportion to the body, at the same time free from disease, are of more frequent occurrence than those presenting a diminished size of the organ, in the average ratio of about eight of the former to five of the latter.

The following case of chlorosis is merely interesting as illustrative of a well-marked instance of a congenital small heart, with symptoms purely functional.

Aun Eaton, æt. 19, a dress-maker, states that she has enjoyed uniform good health up to the present period of attack, but for some weeks past has suffered from constant pain in the left side, not increased on pressure, with uneasy "falling" sensations in the regions of heart, some cough without expectoration, and general uneasiness at epigastrium. Tongue moist, but coated at edges; bowels usually costive; catamenia irregular; pulse small, quick, feeble; chest narrow and contracted, yielding a clear sound on percussion over entire surface; the usual dull space over region of heart much limited; breasts small and imperfectly developed; respiratory murmur healthy; both sounds of heart much louder, clearer, and more abrupt than natural, and audible over entire chest; impulse very feeble, apex imperceptible, slight bruit de soufflet with first sound, and loud bruit de diable over right carotid; no pulsation at epigastrium; abdomen tympanitic; urine scanty, with an occasional sediment; ankles swelled and puffy.

A mustard poultice was applied to the side, and under the continued use of warm stimulating purgatives, together with the iodide of iron, and temporary relaxation from the accustomed sedentary occupation, the patient completely recovered; both bruits entirely disappeared; catamenia became regular; every abnormal symptom vanished; the direct physical signs of naturally small size of heart alone remaining.

The figure of the above patient was tall, and, with the exception of the chest, well formed.

I have selected this case from others, simply because it indicates so distinctly the points to be attended to in the diagnosis of the structural peculiarities under consideration.

The diagnosis of cases presenting the above peculiarities in development is not unfrequently attended with considerable ambiguity, especially if com-

plicated with symptoms consequent on functional derangement.

It is principally by the absence of positive evidence in reference to cardiac disease that we are enabled to arrive at just and correct conclusions. Thus, as previously stated, we may have extended dulness on percussion, the apex of heart may be felt striking the parietes so low even as between the seventh and eighth intercostal space; nevertheless, the organ itself, naturally large, may be entirely free from disease. In these instances, although the pulse be strong, yet it is not the full, regular, vibrating pulse of hypertrophy. Again, there may be dyspnœa, arising probably from many causes, yet not the constant suffocating dyspnœa of pure cardiac affections. The absence also of venous congestions, bloated countenance, turgid and pulsating jugulars, and dropsical effusions, will materially aid us in our examination.

It is by negative signs also that we must, in a great measure, be guided, in cases where the heart is normally small.

By attending minutely to the general history of the case, by present symptoms, and by the absence of the usual sympathetic phenomena attendant on organic cardiac disease, we in general shall be enabled, without difficulty, to arrive at a just and satisfactory result.

The practice of daily and carefully examining cases of this description by the combined aid of inspection, palpation, percussion, and auscultation, cannot be too strongly insisted on; for by this alone can we form a correct diagnosis, and permanently remove the anxiety of the patient and his friends, at the same time prevent most serious errors in the treatment.

CASE OF GLANDERS.

To the Editor of the Medical Gazette.

SIR,

THE effects of the poison of glanders on the human constitution have now been observed and recorded in a good many instances, but the resulting disease is still sufficiently new to the annals of medicine, and important in itself, to make it desirable that every case in which it occurs should be presented in some detail to the profession, whose

interest in the subject may, perhaps, be in some measure enhanced by their constant demand on the services of the noble animal in whose frame the poison in question is first generated. These reasons will, I trust, warrant the request of a portion of your space for the following case, though it was seen by me at too late a period to allow of a thorough investigation of its course, and was not elucidated by post-mortem examination.

I was called, on the 3d of April last, to visit (in conjunction with Mr. Ferris, an experienced surgeon of this town) a young man, named Joseph Pascoe, of the age of 22, and of tolerably robust constitution. I found him in the following state:—

His face was bloated and swollen, with a blush of dusky red on the right side. The right eyelids (the upper especially) were very much swollen, infiltrated with serum, and of a rather livid hue. Punctures had been made in the upper and outer portion of this swelling, and in these points small ulcers, discharging a sanious pus, were formed. The eye was, in consequence, entirely closed, and a thick mucopurulent discharge exuded from within the lids. On the left side the swelling was less. A gluey semi-transparent secretion presented itself at the left nostril, but did not escape in any considerable quantity. The voice was thick and hoarse, and the throat sore, so that deglutition was painful. Bright erythematous patches appeared, with diffused swelling, in several spots, the largest being above the right knee (which had been very painful, and was still painful on pressure), and on each instep. No portion of these patches was hardened or circumscribed; their surface was rather glossy, and the redness was readily dispelled by the touch, to reappear as quickly on its removal. No other form of cutaneous eruption was visible. The patient was capable, on being roused, of answering questions collectedly, but speedily relapsed into a state of sopor, with muttering delirium. In this state he generally lay, and his sensibility to pain was, no doubt, much blunted, and the particulars of his suffering not very clearly to be ascertained at this stage of his disease. Paroxysms of excitement now and then occurred, during which he endeavoured to leave his bed. He did not complain of pain

in the head. The breathing was oppressed and hurried, with mucous rhonchus at times. The abdomen was very tympanitic; the bowels rather confined.

Turpentine was administered by the mouth, and in enema; and copious, dark, offensive dejections, with free discharge of urine, took place. The tympanites subsided in great measure, and the patient subsequently took several doses of a mixture containing creosote. His state, however, became gradually worse. The delirium was, in the course of the night, more violent, so that he was kept in bed with difficulty; and on the following morning (April 4th) the swelling had extended to the left eyelids, and on the right side it had assumed a dark livid hue, in parts nearly black. The discharge from the left nostril was slightly tinged with blood. The delirium was much the same in character and degree as yesterday. I observed, that in his mutterings he made frequent reference to horses. In the course of the day the coma became more complete, and he died in the evening, about thirty hours after my first visit, without any further change of symptoms.

It appeared that he had been affected, for about a fortnight, with pain in the loins, lassitude, chills, and other feverish symptoms, which were referred to a mild form of "influenza" then prevalent. The subsequent sore throat, and erysipelatous inflammation of the eyelids, were not sufficiently peculiar to have excited much attention.

The *ensemble* of his appearance and symptoms led me, immediately on my first seeing him, though knowing at the time nothing of his history or occupation, to suspect the influence of some animal poison on the system; and as the contagion of glanders was that to which he might most probably have been exposed, I directed my inquiries in the first place to this point. I then found that he had been employed as driver of a van, and that one of his horses had been for many months diseased, and affected with a discharge from the nostril, and that he had attended the horse closely, and had been in the habit of wiping away the discharge. Before his death, I was informed by his father that he had seen the horse snort out a quantity of this secretion into the middle of his son's face. I examined the horse, which was stated to have been latterly

improving in health. It was not much out of condition, but had still a discharge from one nostril, and also some small tumors inside the lower jaw. It was considered by the farrier to have been for a long time decidedly affected with glanders.

The young man had complained since Christmas of lassitude and pain in the back and limbs, which he attributed to exposure to cold and wet. His voice likewise had been rather husky, and there had been some discharge from the nose, giving him what he called "the snuffles."

It seems probable that the disease was communicated through the schneiderian membrane, perhaps through the conjunctiva; no wound, abrasion, or local affection indicative of any other origin, having been noticed by the patient or his friends.

The discharge from the nostril, and the infiltration of the eyelids, together with the irritative fever, were common to this case with all the others to the records of which I am able to refer.

The absence of all pustular or tubercular affection of the skin is unusual, but analogous to what is commonly observed in the effects of wounds received in dissection.—I am, sir,

Your obedient servant,
CHAS. BARHAM, M.B., Cantab.
Physician to the Cornwall Infirmary.

P.S.—Incidentally to the above case, it may not be irrelevant to allude to what has long appeared to me to be one not improbable cause of a disease of not unfrequent occurrence, and of the utmost importance in its consequences, both direct and indirect—puerperal fever. The cause which I suspect is the introduction of animal matter from the parturient female into the system of another by the hand of the accoucheur. If we consider the exceeding subtlety of poisons of this nature, and the infinitesimally small quantity capable, when it does act, of producing the most disastrous effects, on the one hand; and on the other the difficulty of ridding the cuticle entirely of the animal fluid it has imbibed, a fact often disagreeably proved, after dissecting or examining bodies, by the tenacity with which the offensive smell clings to the hands, notwithstanding repeated washing, the probability that some animal particles may be introduced in the manner stated, and that in quantity

sufficient to affect the system of the recipient, appears very strong. Again, if we look to the pathology and morbid anatomy of this disease, in its worst forms, as exhibited by recent investigations, which show it to be intimately associated with uterine phlebitis, whilst its symptoms present many points of resemblance to those produced by dissection wounds, we are led to the inference that the causes of inflammation of the lining membrane of the vessels are, in both instances, similar in their nature, and in their mode of introduction into the system. The fact that this very fatal form of disease has often occurred in the practice of some one particular individual only, in a neighbourhood, has frequently attracted attention, and measures of caution have been consequently recommended; but these have, as far as I have seen, extended only to the dress. Now the supposition that effluvia, absorbed, and again given out by the dress, occasion the disease, involves these difficulties: First, the poison must be considered to be chiefly, if not exclusively, absorbed by the respiratory surfaces of the patient, surfaces which are known to be exposed to the most condensed emanations from animal matters, in that state in which inoculation with them is most dangerous, and yet no ill effects are produced. Secondly, the many females exposed to the same effluvia, from being about the person of the lying-in woman, neither take nor communicate the disease, as they would no doubt occasionally do, had their clothes imbibed a poison capable of acting in the way supposed. Besides, it is necessary, on this view, to imagine that, whilst the poison is introduced by the channel of one system of organs, it leaves this altogether intact, and its effects are produced on another system, remote from the first—an anomaly which occasions, in order to its explanation, the calling in of some mysterious susceptibilities of the patient.

On the other view the series of phenomena is perfectly intelligible, and in accordance with our knowledge. An animal fluid of deleterious quality, such as we know to exist frequently before as well as after death, is imbibed by the cuticle of the hand of the accoucheur; a portion of this is taken up by the uterine vessels of a puerperal patient, to which it is directly applied, and which are then in a condition most favourable to absorp-

tion; the system to which the poison is applied becomes first affected, and afterwards the well-known symptoms of irritative fever are developed.

The objection may perhaps be made, that the accoucheur's hand is, itself, seldom affected by this poison, which it is here considered to be the medium of conveying; but the relative conditions of the hand, covered with cuticle, and of the uterine surface, at parturition, will fully account for the difference of result; the former serving as an adequate protection in dissection, or only permitting, at most, a slight erythematous inflammation to take place, whilst a particle of the same fluid which it so innocuously imbibed, may, when introduced into a scratch, give rise to a train of symptoms similar to, and as deadly, as the worst form of puerperal fever.

It is probable that the views I have just explained have been stated and, no doubt, more ably, by others; but as they have not been noticed in any work which I have perused, I have thought it best to place them thus briefly upon record. Repetition, in regard to a disease so intensely interesting, is venial; it may even be desirable, if it leads to the adoption of those means of precaution, not certainly very generally used at present, which are suggested by the opinion itself, so obviously, that to detail them would be impertinent.

A LETTER FROM DR. MURPHY TO DR. ROBERT LEE,

RESPECTING THE SITUATION OF THE DECIDUA IN CASES OF EXTRA-UTERINE GESTATION.

[For the Medical Gazette.]

SIR,

HAVING just read some interesting observations of yours in the MEDICAL GAZETTE, "On the situation of the deciduous membrane in cases of extra-uterine gestation," in which you state that, "In all the cases of fallopian tube conception which have since been recorded, except those of Mr. Langstaff and M. Velpeau, a deciduous membrane has been described as present, lining the cavity of the uterus," I have taken the liberty of directing your attention to a case of extra-uterine conception which was detailed before the Dublin Obstetrical Society, and was subsequently

recorded in the 45th No. of the Dublin Journal (July, 1839.)

In this case I could find no trace whatever of decidua; the internal surface of the uterus was quite florid. Whether the decidua might have formed in the cyst I will not say, as the advanced stage of the pregnancy made it difficult to ascertain it.

Knowing that you can appreciate the value of every fact which bears upon your investigations, and the difficulty of gleanings them from the mass of medical records, I feel assured you will pardon this mode of calling your attention to (I believe) not an unimportant one.

I am, sir,

Your obedient servant,

EDWARD W. MURPHY.

12, Upper Temple Street,
Dublin, June 7, 1840.

MEDICAL GAZETTE.

Friday, June 19, 1840.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
lupanicum sit, dicendi periculum non recuso."

CICERO.

THEORY AND PRACTICE.

ALTHOUGH theory and practice ought to throw mutual light on each other, it too often happens that they are totally at variance; so that Pope's celebrated couplet—

For wit and judgment often are at strife,
Though meant each other aid, like man and wife—
might be applied, if slightly altered, to speculation and facts.

It too frequently happens that theory limps behind practice, and is merely able to explain the facts which its rival has ascertained; occasionally, but too seldom, practice is derived from speculation. Even that secondary kind of theory, however, which follows facts at a distance, is of use; for it is difficult to explain, without at the same time suggesting; and thus it is that even an imperfect theory is like a golden thread which binds together what would otherwise be scattered. It is the necessary

casket, without which some of the jewels would be lost.

In England, many practitioners are as ready to cry out "no theory!" as if all the facts of medicine could be collected and applied, singly, without any link to connect them.

In France, on the other hand, theory is triumphant, and the practice of physic is sadly neglected, as far as regards the discriminating use of medicines. Bleeding and leeches, indeed, are constantly employed, (contrary to the supposition of those English practitioners who do not read French books or journals); but the use of many common drugs is so neglected, that the registers of medicine which have now been kept for 2000 years, would seem to have been kept in vain for the French.

The reason of this is clear enough. Although in some instances the registers have been kept pretty diligently, in others they have been so negligently scribbled, that they confuse rather than instruct. Now, our neighbours over the water so passionately thirst for a lucid plainness in every branch of knowledge, that a dim theory, or a doubtful fact, is alike distasteful to them; and hence we may easily conceive the repugnance with which they must regard thousands of the so-called facts with which medical books abound. The virtues of drugs, say the French, are not to be believed on the unconfirmed evidence of old writers; *quære peregrinum*—you have taken us in too often. We have rejected marygold and yarrow from our list of drugs, and no longer ask—

Cur moriatur homo, cui salvia crescit in horto?

Why, then, should we trust in calumba, cascarilla, and cusparia?

There is no doubt, however, that many of the drugs now generally rejected throughout Europe, or banished to domestic practice, possess medicinal properties; and it is more than probable that they have fallen into undeserved

neglect from the extravagant praises once lavished on them. When a tradesman, says Chesterfield, asks us ridiculously much, we offer him ridiculously little; and when sage is extolled as an elixir vitæ, we lower it to form a *tisane*—to be, what Laennec calls, one of the “pretexts of the expectant method.” In fact, a medicine has often been despised because it was not on a level with its golden reputation, though it might have done good service in a humbler sphere. Such a rejection is far from judicious. When the Vicar of Wakefield’s wife is for throwing the plated spectacles into the fire, the Vicar says, “though they be copper, we will keep them by us, as copper spectacles, you know, are better than nothing.”

The French scepticism, however, concerning drugs, is far from being confined to those of secondary power. About five years ago we recollect reading, in the *Archives Médicales*, that Andral had been trying purgatives in diseases of the chest, and was much gratified by their efficacy. So exquisite a knowledge of pathology and the stethoscope on one side of the channel, and so much practical acquaintance with remedies on the other, might tempt a patient to proceed to Paris to learn the precise disease of his chest, and return to London to have it treated. But if such a man as Andral learned so well-known a fact at so late a period, what must be the ignorance of the mass of practitioners on this point!

But in other instances, as well as in purgatives, remedies seem to have been dismissed from practice, and to be known only by a faint tradition. French practitioners wish, accordingly, to recommence the doctrine of the *Materia Medica*, and ascertain by registered experiments the properties of drugs in ascending doses. Parent-Duchatelet, according to his biographer, never used the words *souvent*, *quelquefois*, in his

writings; his constant inquiry was, “how often?” “how many times?” The sulphate of copper, like other emetics, frequently purges, but how frequently? This question is answered by a writer in the *Gazette Médicale* of May 23.

Dr. Toulmouche, a professor in the School of Medicine at Rennes, lately determined to try the emetic powers of the sulphate of copper, from finding nothing satisfactory on the point in the books which he consulted. Thus, he tells us that Geoffroy, in his treatise on the *Materia Medica*, gives a long account of copper and its sulphuret, but does not mention the sulphate. Desbois of Rochefort, in his *Cours Élémentaire*, speaks of it only as an external caustic, and as a poison internally. He shows how the symptoms produced by the poison are to be treated, but does not mention the sulphate as an emetic.

Orfila is afraid of it; for in the second edition of the *Dictionnaire de Médecine* he says that the sulphate of copper ought not to be employed as an emetic; alleging that it is extremely poisonous even when a great part has been thrown off by vomiting. Nevertheless, in his treatise on poisons, he mentions it as an emetic in cases of narcotic poisoning. The dose, he says, should be from 15 to 20 centigrammes (3 to 4 grains), adding that in larger quantities it might cause death, by inflaming the intestinal canal. The only English book consulted by Dr. Toulmouche was Cullen’s *Materia Medica*, where, it seems, this remedy is not spoken of under the head of emetics. Three other English authorities are mentioned in M. Guersant’s article on copper in the first *Dictionnaire de Médecine*. M. Guersant observes that the physicians of the last century gave the sulphate as an emetic. Thomas Marryat gave two grains with the same quantity of tartar emetic. On referring, however, to Dr. T. Young’s treatise on

Consumption, we find that the prescription just quoted was only one of Marryat's methods of giving the sulphate of copper. If much diarrhœa was present, he gave a grain of sulphate of copper with four of ipecacuanha. When an ulcer was formed, besides giving copaiba, he sometimes ordered five grains of the sulphate of copper to be dissolved in an ounce of tincture of cantharides, and the dose of the solution to be gradually increased.

If Dr. Toulmouche had consulted more recent English works than Cullen's on *Materia Medica*, he would have found a solution of his question, though perhaps not a complete one. Thus, in Dr. A. T. Thomson's *Dispensatory*, the emetic dose of the sulphate of copper is stated to be from two to fifteen grains; in Dr. T. Young's *Medical Literature*, from five to fifteen; in Gray's *Supplement to the Pharmacopœia*, from two to ten; and in Brande's *Manual of Pharmacy*, we are directed, in cases of poisoning by opium, to dissolve half a drachm of the sulphate in six ounces of water, and give a third part every ten or fifteen minutes, till it operates.

As for Dr. Simmons' dose, which M. Toulmouche inquires after, we learn from Dr. Young's treatise, just quoted, that he gave "first half a pint of water, and then from two to twenty grains of the sulphate in a cup of water, and afterwards another half pint of water, as recommended by Dr. Brookes."

M. Toulmouche, not at all satisfied with the silence of some authors, and the vague information of others, tried the sulphate of copper as an emetic in 72 cases, and with very favourable results.

He gave it twelve times in the dose of two grains; and it caused vomiting in eleven of the patients, and purging in four. Thirty-six times he gave four grains to women; vomiting was produced thirty-two times, and from one to three stools twenty-three times. The patients had almost all had the influenza

(*grippe*). Five men took the same dose; all were vomited, and four were purged.

In doses of six and eight grains it always caused vomiting, and in the majority of cases purging also. In one case M. Toulmouche administered twelve grains, and no effect was produced. Colic pain occurred twenty-five times in the seventy-two cases. In about one-third of the whole number of cases purging was produced without vomiting. On the whole, the professor thinks the sulphate of copper as safe as tartar emetic, and asserts that the writers on the *Materia Medica* have exaggerated the danger of administering it.

In the *Gazette Médicale* of June 6th, M. Toulmouche gives us his experiments with the sulphate of zinc. Here, too, he is dissatisfied with the accounts given by the writers on the *Materia Medica*. Several of them do not mention the dose; in others the emetic dose is made to vary from 3 to 21 grains; and in the dictionary of the *Materia Medica*, by MM. Mérat and Lens, it is said that in England, Drs. G. R. Mittal and Row have given it in the dose of 40, 80, and even 120 grains, in cases of poisoning by opium. Had M. Toulmouche consulted our modern English works on the *Materia Medica*, he would have found more uniformity of opinion.

Thus in Dr. A. T. Thomson's *Dispensatory*, the emetic dose of sulphate of zinc is stated to be from 10 to 30 grains; in Dr. T. Young's *Medical Literature*, from 15 to 30 grains; in Gray's *Supplement* from 10 to 30; and in Brande's *Manual* the average dose is stated to be twenty grains.

Smaller doses were found effectual in the professor's practice. In the dose of two grains it failed five times out of seven; four grains failed five times out of nine; six grains succeeded seven times out of nine; eight grains succeeded six times out of seven; ten grains succeeded twenty-five times out of thirty-six;

twelve grains were given three times, and always succeeded; fifteen grains were given seven times, and succeeded only twice.

M. Toulmouche tried the sulphate of zinc as an emetic in 83 cases, and the result of his experiments is, that ten or twelve grains are the most eligible dose. He was afraid to go beyond 15 grains, and thinks that the very large doses sometimes given by English physicians were administered only in cases of poisoning by opium, where the stomach had become insensible to the stimulus. In a great number of the professor's experiments, the zinc acted as a purgative, and in rather more than one-third of the cases produced slight colic pains.

If we were asked our opinion as to the usual emetic dose of the sulphate of zinc in this country, we should say twenty grains. On the whole, we think that M. Toulmouche has produced a valuable contribution to some future treatise of unrivalled accuracy on the *Materia Medica*; and though some of our readers may be inclined to suppose these experiments unnecessary, much in our opinion yet remains to be ascertained concerning the powers of still commoner remedies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

June 9th, 1840.

SAMUEL MERRIMAN, M.D., in the Chair.

Some Observations on the Mode of Union of Fractured Bones. By R. H. MEADE, Esq., Lecturer at the Middlesex Hospital.

THIS paper, which is one of a series upon the subject intended by the author to be brought before the society, contains the details of several experiments conducted on rabbits and guinea-pigs, with a view of determining the precise mode of union in fractures of the flat bones, the scapula being here selected for the purpose as the most easily fractured. The animals chosen were of different ages, that it might be ascertained whether age exerted any material influence on the reparative pro-

cess, and care was taken to inflict as little injury as possible on the soft parts. Preparations and drawings of the parts were exhibited in illustration of the narrative. From these experiments (nine in number), and many others of a similar kind performed on the scapula, the author infers that union is accomplished in the thick part of the scapula exactly as it is in the cylindrical bones, viz., blood is effused into the different tissues surrounding the fractured part; that this blood is next absorbed, and coagulated lymph deposited in the substances of the muscles, and in the neighbouring cellular tissue, so as to form them into a solid gelatinous mass. The periosteum which has been ruptured is separated from the fractured edges, inflamed and thickened, and lymph is effused between the fragments themselves. At a later period the external mass decreases in size, the muscles return to their natural texture, and a firm layer of cartilaginous matter surrounds the fractured spot, with which the periosteum is so completely blended that it is difficult to say whether it is external to or beneath it. This callus adheres firmly to the surfaces of the bones, and dips down between the fragments. Ossification then takes place by the deposition of earthy particles in the cartilaginous matter, which particles are deposited irregularly through all parts of the provisional callus at the same time, and do not appear first at that part which is next to the surface of the bone.

The process of union of fractures in the flat part of the scapula differs somewhat from the process here described. In speaking of the part which the periosteum plays in the production of the callus, the author observes that where two fractured portions of a flat bone overlap each other, and the edges which are in contact are denuded of their periosteum, union takes place between the opposed surfaces through the medium of fibro-cartilaginous substance becoming osseous, which possesses all the characters of the common external or provisional callus. This matter must here arise from the surfaces of the bone itself; and this fact shews that the provisional callus may be generated independently of the periosteum.

The author denies, in opposition to the opinions of Macdonald and others, that the cartilaginous matter differs from true cartilage in becoming tinged red when the animal has been fed on madder.

Account of a Case of Aneurism, supposed to have opened into the Pericardium a considerable time before death. By THEOPHILUS THOMSON, M.D., Physician to the Northern Dispensary, London, &c.

About the middle of the year 1838

Richard Tofield, a blacksmith, of strong muscular frame, was seized with pain in the back and side, after which he continued to suffer from palpitation, and fainted occasionally at his work. From the beginning of June, 1839, he was several times visited by Mr. Bird, the house-surgeon of the Northern Dispensary, who found irregularity of the pulse, most observable in the right wrist, with prominence and pulsation of the right side of the chest. On July 21, 1839, Dr. Theophilus Thomson visited him, lying in bed, with his lips and ears livid, skin perspiring, and anxious countenance. The audible symptoms observed in the chest, which were remarkable, and the treatment, under which the patient sometimes walked a mile, are described. In September he became worse; and on the 19th was found again confined to his bed, with great lividity of countenance and rapid pulse. By change of treatment his pulse became regular, and the expression of his countenance cheerful. He continued better till the 29th of September, when, on getting up to relieve his bowels, he became suddenly worse, stared wildly for a moment, uttered an exclamation, and fell back dead.

On opening the body, the pericardium was found distended with a prodigious quantity of blood, so that the heart was not without difficulty discovered. It was enlarged, flaccid, and greatly displaced, so as to explain the peculiarity of the sound remarked before death, in different parts of the chest. The pericardium also presented great marks of disease, both ancient and recent. The aorta, near its origin, was dilated to more than twice its ordinary size, and, two or three inches above the aortic valves, was discovered an orifice by which the blood must have escaped into an orange-sized cavity from which it passed into the pericardial sac. The author then states his reasons for thinking that the rupture into the pericardium had taken place a considerable time previously to death, and refers to Laennec, as giving countenance to the opinion that life is not necessarily terminated immediately, by such an effusion.

Account of a Case of Spontaneous Rupture of the Heart into the Pericardial Sac, under which life continued for about ten hours.

By WILLIAM STROUD, M.D.

Frederick P., aged 29, after anxiety and vexation endured for a considerable time, and after having been liable to profuse bleeding of the nose, during the spring season, for many years, was, on the non-occurrence of this bleeding, subject for six weeks to a sense of fulness in the head, with lassitude and somnolency. On the morning of April 27, 1839, after having

returned from Covent Garden Market, he was seized with faintness, giddiness and vomiting, and insensibility. The pulse became imperceptible, and he was apparently in a dying state. He was promptly bled by Mr. Symes, to three pints, recovered a little, continued complaining of great tightness of the chest, and weight at the heart, but died the same evening.

The pericardium contained a quart of blood which had escaped through an opening in the right auricle just below the insertion of the vena cava superior, the edges of which were not attenuated or apparently ulcerated. The author accordingly suggests the prudence of relieving plethoric oppression, even where signs of structural disease in the sanguiferous system are not evident. In this patient the heart was large, and loaded with fat.

PATHOLOGICAL DEPARTMENT.

June 16, 1840.

DR. CLENDINNING IN THE CHAIR.

Gangrene of the lung.

DR. BOYD exhibited a preparation of gangrene affecting a small extent of the posterior portion of the left lung. The part affected was about an inch and a half square. An abscess of nearly the same size was situated in a corresponding part of the right lung. The most remarkable circumstance in the case was, that the patient had no cough or indication of pulmonary disease; and he had no sœtor of his breath. He was brought into the Marylebone Infirmary in a low, reduced condition, complaining principally of the state of his stomach, and of pains in his limbs. It was stated by his wife, who accompanied him, that he was accustomed to drink to great excess. It was necessary to give him stimulants to support him in his sinking condition; but he died in eleven days.

Series of four preparations of Aneurism of the Arteria Innominata.

Mr. Shaw had on the table four preparations of aneurism of the arteria innominata. Interesting observations, he remarked, might be made from the facts which had to be stated concerning these specimens on the table: but he would confine himself to giving a description of the principal morbid appearances exhibited in the preparations, and to mentioning the more important circumstances observed during life, in the different patients. He considered the subject of the effects of these aneurisms especially interesting, after having so lately had the remarkable case of operation upon the two branches of the innominata, for aneurism, laid before

the Society by Mr. Wickham, of Winchester.

Aneurism of the innominate of great size; orifice of the subclavian artery closed; obstruction of the veins; pressure on the axillary nerves, and on the trachea; absorption and disarticulation of the clavicle.

The first of the series was a dried preparation. The larger trunks of the arteries, veins, and nerves, together with the trachea, the clavicle, and portions of the sternum and ribs, were preserved in connection with the aneurismal tumor. Mr. Shaw stated that he was indebted to Professor Budd for the details of the symptoms of the patient during life, and for the opportunity of making the dissection; the patient having been under that gentleman's care, in the hospital-ship Dreadnought.

The tumor was of a very large size, extending obliquely to the length of about eight inches, from the root of the innominate, to within three inches of the acromial extremity of the clavicle; and reaching upwards about four inches above the level of the clavicle, and descending as many below that bone. One lobe of the tumor passed downwards, in the thorax, as far as to the level of the third rib. A smaller sacculated pouch projected backwards so as to press upon the trachea. Upon making an incision into the aneurism, it was found to be filled with dark and soft coagulated blood; some parts of its walls being lined with thin layers of fibrine. The coats of the tumor varied in thickness from about a quarter to half an inch: the inner surface was generally rough, irregular, and broken; the outer coat had different degrees of firmness in different parts, consisting in some places of dense fibrous membranes, in others of the surrounding textures more imperfectly changed by the compression of the tumor. The most remarkable appearance that offered itself, on making the section of the aneurism, was the condition of the clavicle. It was absorbed by the contact of the tumor to such a degree, at its sternal extremity, that it was perfectly detached, and moved freely in the centre of the tumor, surrounded by the coagulated blood. The whole extent of the bone involved in the aneurism was denuded of its periosteum, and rough in its surface, from the effects of the absorption; and small spiculæ or patches of ossific deposit were found upon the inner surface of the aneurismal sac, in those parts which it may be supposed were previously in contact with the clavicle. A portion of the first rib, and likewise a part of the sternum, were removed by absorption, leaving the surfaces in these parts rough, and exposed to the blood.

The arteries.—The aorta did not present

any particular morbid appearance; it had only a few small specks of calcareous concretions upon its inner surface. The innominate came off from the arch, of its normal size, and then its walls immediately expanded into the aneurism. It has to be noticed that a very small aneurismal pouch, that might contain a nutmeg, was formed in the arch of the aorta, immediately above and behind the orifice of the innominate; so that a part of the parietes of the innominate formed the septum between the greater aneurism, and this smaller one of the aorta. On looking for the orifice of the right carotid artery, it was seen, at its normal distance from the commencement of the innominate, opening obliquely into the sac. In regard, however, to the subclavian artery of the same side, its orifice was completely obliterated. Nothing but a slight depression in the surface of the sac could be seen to mark its former situation; the sides of the opening had contracted, and become closely adherent. On tracing this vessel in its course over the first rib, it was found descending behind, and to the side of the tumor. In the first part, where it emerged from the aneurism, it was greatly contracted in size, and was impervious for about half an inch; but when it reached the axilla, its calibre was of the usual dimensions. It was particularly noticed that the vertebral artery, the thyroid axis, and the mamma interna, were impervious at the point where they were given off from the subclavian artery.

Veins.—Looking to the veins of the right side, in the first place, no trace could be discovered of the right subclavian vein. The right axillary vein was found behind the tumor, diminished to the size of a crow-quill; and it was traced into the walls of the aneurism, so as to be seen entering them, and gradually lost in their substance. Turning next to the internal jugular vein of the right side, it was observed to pass behind the aneurism, and to be continuous with the right brachio-cephalic vein; but no vestige could be perceived of the remains of the right subclavian vein, to mark where that vein originally joined it. The jugular vein, and also the brachio-cephalic vein, were very remarkably contracted in their diameters; so that it was difficult to pass a small bougie through the narrowest part. The left brachio-cephalic vein encircled the fore part of the tumor, and was diminished so much in size that it only allowed a bougie of number ten to pass along it. It has to be observed that scarcely any thickening of the coats of the veins was perceived, and they were free from any deposit of lymph in their interior.

Nerves.—The axillary plexus of nerves was involved in the walls of the tumor, at

its back part. The cellular substance which surrounded the nerves had the appearance of being inflamed; it being infiltrated at that particular part with serum, and even partially broken down to form an abscess. The right par vagum was traced into the walls of the aneurism, until it could no longer be followed. The recurrent branch was seen spreading, at first, in a flattened form on the parietes; then it became involved in them, and could not be traced to any extent. From the difficulty of the dissection, it was left doubtful whether these nerves preserved their continuity to their destinations, or not.

The patient was a sailor, 50 years of age. He was admitted under Dr. Budd's care on the 9th of May, of last year; and was under his observation till he died, in the end of the following January. When he first presented himself, no tumor was apparent; but a pulsation was felt at the upper part of the sternum, and under the sternal end of the clavicle. Although there was no obvious tumor, the hollow space below the clavicle, and also the depression between the insertions of the sterno-cleido-mastoideus muscle, were more filled out than is natural, and there was considerable pain when these parts were pressed with the fingers. The superficial veins in front of the neck, on the right side, were preternaturally dilated. The pulse could not be felt in the right arm, either above the elbow or at the wrist; while in the left arm it was strong, and 76. The pulsation of the carotid and temporal arteries was equally strong on both sides. He suffered pain in the right side of the neck, to some distance upwards, and he had numbness in the right arm. His voice was hoarse, and he was troubled with a dry teasing cough. He had a slight difficulty in swallowing. He only experiences pain in the part where the pulsation is felt after exertion. He stated that he had been ill for four months, and that the pain, together with the hoarseness, came on suddenly.

In the course of two months from his admission, a swelling became apparent at the sternal extremity of the clavicle. This tumor first manifested itself by a gradual rising and thrusting forwards of the sternal head of that bone at the articulation. The swelling grew more and more distinct every succeeding week, sometimes making progress at one period more rapidly than at another, till in the beginning of Dec. it was found to be of very considerable size, and to beat with alarming violence. The tumor rose above the clavicle, and also descended below it; that bone forming a depression in its centre. At this time he suffered very greatly from dyspnœa, and could not lie flat on his back, from the

dread of suffocation. His voice was husky, and he could only speak in a whisper. A new symptom presented itself at this period. His right arm and hand became œdematous. Besides, the numbness in these parts was much increased, and he suffered acute pain in them. He also lost the power of motion in the arm. The report of the 4th Dec., states that both arms had become œdematous below the elbows, and that the face had a bloated appearance. Both temporal arteries continued to beat with equal strength. From this period all the symptoms became aggravated. That which drew the principal attention was the dreadful pain that the patient suffered in the arm; he continued to repeat, that the pain would drive him mad. He was obliged to be propped up in bed, on account of the difficulty of breathing. The œdema increased, but it was limited to the head, neck, and upper extremities. The tumor became larger, and the skin covering it red, so that, for several weeks, there was a constant dread of the sac suddenly bursting. He died on the 22nd Jan., exhausted from the long-continued pain in the arm, and laboriousness of respiration.

Aneurism of the Arteria Innominata—Obliteration of the adjoining Veins—Obstruction of the Thoracic Ducts.

The next preparation was also one of aneurism of the arteria innominata. The sac was of the size of two fists laid together. It communicated with the arch of the aorta by an opening which corresponded with the orifice of the innominata, enlarged to about twice its natural size. The walls were of irregular thickness, not exceeding, in most of their extent, that of the parietes of the aorta. The inner surface was in general rough and broken, and had here and there thin layers of fibrine deposited upon it; but in other parts it was smooth, and assumed the appearance of the natural internal coat of the arteries. From the continuity of the walls of the aneurism with the coats of the artery, the tumor had that appearance which might be supposed to mark that the aneurism was originally formed by the dilatation and expansion of the arteria innominata: the posterior part, however, of that artery was of its natural length, from the aorta to its bifurcation, not having undergone any dilatation or change.

The veins.—The venous trunks, which conduct the blood from the head and neck and upper extremities, were preserved in connection with the tumor, to exhibit the effects of the pressure of the aneurism upon them. All these vessels were found to be impervious. The internal jugular veins of both sides had their coats greatly thickened; and, near their junction with

the subclavian veins, their canals were completely closed by the adhesion of their coats. The subclavian veins preserved their natural structure, and were only obliterated at the point where they were joined by the jugular veins. Both brachio-cephalic veins, besides having their canals closed at their commencement, were entirely obliterated at the part where they unite to form the vena cava superior, so as to be lost in the parietes of the sac. On forcing a probe along the left brachio-cephalic vein, the coats of the vein were seen terminating on the internal surface of the aneurism, about two inches from the point where the vena-cava became distinct from the walls of the tumor. It was thus proved that a portion of this brachio-cephalic vein had undergone absorption from the pressure of the tumor. It has to be mentioned, that, in order to facilitate the examination of the vessels, the veins had been previously injected: it was found that the coats of the vena-cava were so thin, and the adhesion between them and the sac so weak, at the part where the vessel was involved in the parietes of the sac, that the side of the vein towards the aneurism became ruptured by the force of the injection, and the fluid escaped into the interior of the tumor.

Lymphatics.—The veins into which the trunks of the absorbents enter having been obliterated, it became interesting to examine the appearance of the absorbent vessels and glands. It was not, however, an easy task to follow the thoracic ducts by dissection, in consequence of the condensation of all the parts in the vicinity of the tumor. A part of the right thoracic duct, about three inches in length, was preserved in the preparation, to shew that it was obstructed at its termination, and ended in the closed brachio-cephalic vein. The coats of the duct were much thickened, and its interior was filled with a deposit of a firm nature, resembling coagulable lymph. The great thoracic duct had been injected in the abdomen previous to the dissection; but it could not be traced to its termination. It was followed along the posterior mediastinum as far as to the tumor, where it became so much involved in the dense textures situated there, that it was lost sight of. In this extent its appearance did not present any thing preternatural. The lymphatic glands, wherever they were examined, were found to be unusually large and congested. An unexpected number of these large glands was found studding the walls of the aneurism, and firmly adhering to them in every direction. Those of the neck had acquired such a size that they occasioned a perceptible fulness in the lower part of the neck during life. The glands of the

axilla, and those also of the groin, resembled the others in being greatly increased in size, and being, like them, of a purple colour, and gorged with bloody serum. The glands of the mesentery were enlarged, but not quite to the same degree as those which have been noticed.

For the account of the symptoms observed in the patient during life, Mr. Shaw expressed himself indebted to Dr. Watson, under whose care the patient had been, in the Middlesex Hospital.

James Buck, aged 33 years, was admitted in the beginning of March 1838. His countenance presented a peculiar appearance, being remarkably turgid, and the eyes projecting: the veins of the ears, the lips, and the nose, were also of a purplish colour. On uncovering his chest, the jugular veins were perceived to be unusually full, and numerous tortuous and prominent veins ramified upon the shoulders and whole front of his breast, as well as the abdomen. These varicose veins were especially numerous around the nipples, where they formed circles of inosculations or plexuses with each other. On each side, the veins on the breast communicated by five or six superficial trunks with the cephalic and thoracic veins: they also communicated above with the veins of the neck, and below with the superficial epigastric veins. The veins of the right side were more tortuous than those of the left; the epigastric veins pursued nearly a straight course. Independently of the fulness caused by the blood-vessels, there was a distinct tumid appearance in the neck, above both the clavicles, produced (as was afterwards found upon dissection) by an enlargement of the lymphatic glands situated there.

The pulse at the wrist was considerably smaller and weaker on the right than the left side. No external tumor, having any pulsation, could be perceived, although the most careful examination was made. But an interesting circumstance was observed: the heart's action could be heard and felt at its proper place beneath the left nipple, strong and heaving. It was also found, that, about the middle of the upper portion of the sternum, the ear, at each systole of the heart, was distinctly jarred, though with less force than in the præcordial region; but in the space intermediate between these two points, no similar jarring sensation was perceived: nevertheless, the heart could be heard beating at this part, with a slight bellows-sound. It was considered, by Dr. Watson, that the jar communicated to the ear at the upper part of the sternum, indicated the swelling out of an aneurismal pouch in that situation, when the sac was filled by the contraction of the heart.

The patient lived to the end of July of

the same year. The treatment consisted principally in abstracting blood at frequent periods, by cupping, and in administering drastic purges. By following this plan, the patient was so much relieved at different times, as to leave the hospital and become an out-patient. For the last three or four days he suffered under the symptoms of acute pericarditis, by which he was carried off. It has to be added to the account of the dissection, that, on a large extent of the surface of the heart, a layer of reticulated lymph was found; and the pericardium contained a quantity of reddish-brown fluid.

Aneurism of the innominata: œdema of the head and neck and upper extremities.

Mr. Shaw next drew the attention of the society to another specimen of aneurism of the arteria innominata. In the preparation the aneurismal tumor was seen, with a portion of the arch of the aorta and its branches, together with the venous trunks which form the vena cava superior. The aneurism arose from the innominata midway between its origin and its bifurcation: it was of an oblong shape, measuring in its greatest length, which was in the direction upwards, about five inches, and in its transverse direction, three inches and a half: it was filled to four-fifths of its extent with concentric layers of fibrine, which gave to the whole tumor a hard and solid feel. Mr. Shaw mentioned that in making the post-mortem examination the tumor was found to reach upwards along the side of the trachea, so as to overlay the lower part of the thyroid gland; it had also caused partial absorption of the right clavicle, and of the upper part of the sternum. The orifice of the innominata, where it arises from the aorta, was nearly of its natural size, being dilated only to a slight degree: the openings of the right carotid and subclavian arteries were likewise of their usual diameters: the tumor rising from one side of the artery in such a manner as not to involve these orifices, but to form a distinct pouch or diverticulum, communicating with the vessel.

The veins.—The left subclavian and internal jugular veins had their coats greatly thickened, and were closed by a firm deposit of fibrine within them. The brachiocephalic vein also of this side was completely obstructed. It was with difficulty, Mr. Shaw observed, that this vessel could be found in making the dissection, owing to its being involved in the dense textures external to the aneurism, and to its size, as well as the structure of its coats, being so much changed. It was perceived in the preparation winding round the lower part or neck of the tumor in front. It was diminished to the size of a quill; its coats

were thick and fibrous, and the interior was occupied with fibrine. The right subclavian and internal jugular veins were seen adhering at the point where they coalesce to the lateral part of the aneurism; their coats were not so much changed as those of the corresponding veins of the left side, yet they were increased in their thickness to a certain degree. The brachiocephalic vein, however, formed by the union of these two veins, was more changed; it was contracted in its diameter, and contained a firm plug of fibrine, which obstructed it completely. Below the point where the two brachiocephalic veins join each other, the vena cava presented a natural appearance.

Adhesions were found between the pericardium and heart, and a clear whey-coloured fluid. The size of the heart, with its valves and cavities, seemed natural. The ascending aorta was very considerably dilated, and its lining membrane was marked with atheromatous deposits.

The face and superior extremities were œdematous, but the lower extremities were free from the slightest infiltration of fluid; nor did the abdomen contain any fluid.

The man from whom this preparation was taken was a patient of Dr. Wilson's; he was forty-four years of age: he was admitted into the Middlesex Hospital on the 1st of September, 1835, and died in the middle of the following October. He stated that he had been ill for two months, but had not been entirely free from pain for the last thirteen years. During the time he was in the hospital he suffered from difficulty of breathing, and could only speak hoarsely in a whisper; he had also difficulty of deglutition. The veins of the face and neck were turgid; and it was remarkable that the upper part of his body, including the head, neck, and superior extremities, became œdematous to a great degree, while no similar appearance was presented in the lower part of his body.

Aneurism of the innominata.

The last specimen was one with the history of which Mr. Shaw did not profess to be acquainted, having procured it at the sale of a museum, without any accompanying account of it. The preparation exhibited an aneurismal dilatation of the arteria innominata, and a portion of an aneurismal sac, which communicated with the dilated artery by a distinct circular orifice. The preparation, he remarked, was interesting, when taken along with the other specimens, as presenting a modification of the form of aneurisms in this situation.

Mr. Paget was induced to ask Mr. Shaw respecting the condition of the veins by

which the collateral circulation was carried on, by the belief that the enlargement of the cutaneous veins, to which it is commonly ascribed, is not nearly sufficient for the conveyance of so large a quantity of blood as is returned from the head and upper extremities. He had lately had an opportunity of examining a case in which the superior cava was almost completely obstructed, but in which the circulation was fully maintained. In Mr. Shaw's cases it seemed probable that much of the blood of the upper part of the body was returned to the heart through the vena azygos; here, however, that was impossible, for the vena azygos was obstructed with the superior cava. The current in the former must therefore have been a descending current; and he had no doubt that it was by the vena azygos and semi-azygos that a considerable portion of the blood from the head was conveyed to the inferior cava, through the medium of the numerous anastomoses of all the veins about the vertebral column above; and the anastomoses of the azygos and semi-azygos with the inferior renal or lumbar veins below. Another chief means by which the circulation in this case was carried on, was the enlarged left internal mammary vein, which was dilated to nearly the size of a swan quill; the right mammary vein on the contrary was of its usual size; its termination in the superior cava being obliterated, so as to render it useless for maintaining the circulation. The cutaneous veins of the chest and abdomen were also considerably enlarged, especially those in the left side, but evidently not to a degree sufficient to conduct away nearly all the blood from the upper part of the body. By them, however, and by the other enlarged veins already mentioned, the circulation was carried on very perfectly; and the man presented no sign of embarrassment from the peculiar condition in which he must have been placed, with a number of great currents of blood, all descending from the upper to the lower part of the body, and thence again ascending through the inferior cava; this latter vessel was dilated to fully double its usual size, and it was evident that all the blood of the great systemic circulation had been returned to the heart through it. Mr. Paget also stated that he had carefully examined the condition of these veins, in which the course of the blood had been contrary to that which it usually takes, for the purpose of determining what was the state of their valves; he had been unable to find any trace of them in any of the dilated cutaneous veins; the lining of those vessels was perfectly smooth and polished.

[To be concluded in our next.]

MEDICAL ASSOCIATION OF IRELAND.

[The following are the resolutions passed at the above meeting, as given in the Dublin Medical Press. Want of space obliges us to omit the speeches.]

The first anniversary meeting of the Association was held in Dublin, on Wednesday the 27th ultimo, and was very numerously attended by representatives of the various local medical associations, and by individual members from every part of Ireland. At one o'clock precisely the President, Richard Carmichael, Esq. took the chair, and addressed the Association at some length on the objects of their meeting. The Secretary then read the following report:—

Report of the Council of the Medical Association of Ireland, presented at the General Meeting held on the 27th of May, 1840.

Since the meeting of the Medical Congress, on the 29th of May last year, the Council have held sixty-three meetings for carrying into effect the wishes of the members of the association.

On the 15th of June they resolved to recommend the establishment, without delay, of district associations where they had not already been formed, and that such local associations should put themselves into communication with the Council, to secure unanimity and effectual co-operation.

On the 29th of June the Council communicated to the British Medical Association the intelligence of the establishment of the Medical Association of Ireland, at the same time suggesting that great advantages might be gained by the co-operation of the two bodies.

On the 13th of July the Council received a communication from Dr. Webster, the President of the British Medical Association, expressing the willingness of that body to co-operate with the Medical Association of Ireland, upon which the Council resolved to request that a deputation from that association should meet one from the Medical Association of Ireland, at Liverpool, during the meeting of the Provincial Medical Association of England.

On the 18th of July the Council resolved to publish an address to the members of the association, explaining the circumstances which necessarily led to an alteration in the plan originally contemplated for the union of the profession, and, at the same time, expressing a hope that this should not alter the views of the association respecting medical reform, or cause them to relax their efforts for the

attainment of the objects contemplated by them. They also made several suggestions as to the future organization of the general and local associations.

On the 25th of July, the deputations from the British and Irish Associations met in Liverpool, along with a committee appointed for that purpose by the Provincial Medical and Surgical Association of England, Dr. Barlow, of Bath, being in the chair, and the following gentlemen being present:—Dr. Webster, on the part of the British Medical Association; Dr. Forbes and Dr. Rumsey, on the part of the Provincial Medical Association; and Mr. Carmichael, Dr. Jacob, Mr. O'Beirne, Dr. Maunsell, and Dr. Macdonnell, on the part of the Medical Association of Ireland.

At this meeting it was resolved—That Drs. Barlow, Webster, and Maunsell, be respectively the organs of communication of the respective bodies which they represent, and that a free communication be forthwith commenced between those bodies for the purpose of drawing up a plan of general medical reform, in the shape of heads of a bill, to be considered by the several committees, and subsequently proposed to the associations; and that a communication be opened with the medical profession in Scotland, and the local associations in England and Ireland, as soon as possible; and that the members of this committee shall exert their influence to the same effect.

On the 12th of August the Council received a communication from Dr. Maffet, the Secretary of the County Monaghan Medico-Chirurgical Association, expressing their approval of the resolutions passed at the Congress, and declaring their determination to promote the objects contemplated; and "That they were willing to assist the Medical Reformers in Great Britain and Ireland in the adoption of such measures as are deemed expedient and necessary to protect the interests of our body, to correct existing abuses, and to promote that harmony of feeling which should exist among the members of a liberal and enlightened profession; and that while they conceived equal rights and privileges should be granted to all having sufficient qualification, and that the monopoly which impedes good feeling, and can only serve the interests of individuals, should be wiped away, they shall always labour to protect, for the honour of the profession, a high and elevated standard of education." On the same day a communication was received from Dr. Colvan, Treasurer of the Armagh Medical Association, enclosing six pounds, to be placed at the disposal of the Council, for carrying into effect the objects of the Association, and also from Mr. Cane, Secretary of the city and county of Kilkenny

Medical Association, enclosing £10 for the same purpose, and expressing the approval of that body of the "wise measures adopted by the Council in their address of the 20th," and stating that they felt grateful for the exertions, the talents, and the energy, which the friends of medical reform in Dublin have devoted to the interest of the profession, and that their humble aid shall be given to the Council in every measure necessary to the protection of our common interest.

On the 17th of July, petitions to both Houses of Parliament were agreed to, praying for a legislative enactment to secure a uniform system of instruction, and equality of qualifications and examinations; to confer equal rights and privileges on all members of the profession; and that one body should be appointed in each of the three kingdoms, to carry such a system into effect.

On the 7th of September, resolutions adopted by the County Cavan Medical Association, relative to the payment of medical witnesses at coroners' inquests, were received; and the Secretary was directed to acknowledge the receipt of the same, and to call the attention of that body to the address of the Council, published on the 24th of July.

On the 5th of December, a memorial address to the Secretary of State for the Home Department, was agreed to, and ordered to be transmitted; and a copy was laid before Lord Morpeth, the Chief Secretary for Ireland, by a deputation of Council. This memorial was subsequently published, with other documents of a similar nature, relative to Medical Reform, and freely circulated for the information of the members of the legislature, and the public generally.

On the 12th of December, a letter was received from Mr. Carter, Secretary to the North of England Medical Association, expressing the willingness of that body to co-operate with the Medical Association of Ireland, to obtain from Parliament the adoption of such measures as shall protect the interests of the medical profession, and place it under an efficient system of government; to which the Secretary was directed to reply, expressing the gratification felt at the information, and the wish of the Council to carry the proposed object into effect.

On the 26th of December, a deputation appointed to wait on Mr. Nicholls, the Poor Law Commissioner, to ascertain the truth of a prevalent rumour respecting the qualification required to be possessed by candidates for the situation of medical attendant to poor-houses, reported that they had seen that gentleman, who assured them that no determination had been come to on the subject, and that no step should be

taken likely to affect the medical profession, without due notice. It was then resolved that a case should be laid before the Attorney General, to ascertain whether the Apothecaries' Company possessed the power of inflicting a penalty on medical men who compound medicines for their own patients in public institutions. A communication having been received from the Armagh Medical Association, stating that the judge at assize had decided that cess-payers in presentment sessions had a right to reduce the fees awarded to medical men by coroners, it was ordered that the consideration of the matter should be referred to a sub-committee.

January the 9th, the case submitted to the Attorney General, relative to medical officers of charities compounding medicines, with his opinion thereon, was read and ordered to be published, from which it appears that the Apothecaries' Company have no power to prevent the physicians and surgeons of hospitals, dispensaries, or poor-houses, from compounding medicines for patients in these institutions.

On the 18th of January, the Council agreed to a petition to Parliament, praying that the subject of medical reform, and the consideration of the grievances under which the profession labours, should receive the attention of the legislature, and transmitted the same to Mr. Fitzstephen French, for presentation. This petition was published, with a recommendation that similar ones should be forwarded by the local associations.

On the 6th of February, a letter was read from Dr. Kingsley, of Roscrea, respecting the allocation of fines levied at petty sessions, in consequence of which, a deputation, composed of Drs. Jacob, Macdonnell, and Maunsell, had an interview with Mr. Hamilton, at the Chief Secretary's office, and ascertained that, in conformity with the statute, (1 and 2 Victoria, c. 99,) all fines must be paid into the office of the paymaster of civil services, and thence issued to charities in such proportions as the magistrates may award to each.

At a meeting of Council, held February the 27th, it was resolved—That a member of Council should attend the meeting of the Eastern and Western Medical Associations, to be held at Cork on the 12th of March, to ascertain the views and objects of the members of the profession in that part of Ireland, for the purpose of more effectually co-operating with them. Dr. Maunsell, the secretary, accordingly attended there, and assisted at the proceedings. At this meeting it was resolved, "that the Medical Association of Ireland is well calculated to form a rallying point for the profession in Ireland, and that the meeting was pledged to give it its support."

On the 19th of March, it was resolved, that the nature and objects of the association not being perfectly understood by the members of the profession in the provinces, it was desirable that a brief summary of them should forthwith be drawn up, and published, which was done accordingly.

March 26.—The president and secretary reported that they had had an interview with Mr. Drummond, at the chief secretary's office, and through him called the attention of government to the state of the medical charities, with the hope of obtaining for them some more permanent means of support than they at present enjoyed. They also suggested some alterations in the bill now in progress for the extension of vaccination; and reminded him, that through the Medical Association, the government could, at all times, ascertain the wishes of the profession in Ireland.

On the 2d of April, a letter from Dr. Jagoe, of Ballineen, having been read, stating that he had been summoned as a crown witness, to Cork, last assizes, and detained for eight days, for which a sum of four guineas was awarded to him, a deputation from the Council, headed by the president, waited on Mr. Drummond, at the chief secretary's office, in consequence, and represented the injustice and hardship of such proceedings, and earnestly requested the attention of government to the subject. Mr. Drummond recommended that remonstrances should be forwarded to the judges, urging the expediency and justice of suitably remunerating medical witnesses; and that petitions to parliament, praying for an alteration in the law, to enable assistant-barristers to afford such remuneration, should be forwarded. Attention having been drawn to the case of Dr. Edge, of Newtown, to whom seven guineas had been awarded, for five days' attendance at Maryborough assizes, an order was made to pay that gentleman ten guineas.

April 25.—A letter from Mr. Major, assistant-barrister of the county Clare, having been read, stating that he had taken off a fine imposed on Mr. John Wilkinson, of Limerick, for failing to attend at a petty sessions, the Council having applied to him on the subject, it was resolved that the thanks of the Council should be given to Mr. Major, for this and other marks of consideration shewn by him to members of the profession in his official capacity.

On the 9th of May, the Council prepared a series of propositions for the consideration of the present Congress, relative to the organization of the association, which have since been published, and to which the careful attention of the present meeting is requested.

On the 22d of May, Drs. Jacob and Maunsell waited on Mr. Hamilton at the

chief secretary's office, to ascertain the cause of the delay in advancing the amount of petty sessions fines, payable to the medical charities, when they learned that it has arisen from the imperfection of returns made respecting them, which must be amended, and that orders to obtain such amended returns are about to be issued, and payment may, therefore, be expected in less than a month.

In concluding this abstract of the labours of the Council for the past year, the members have to express their regret that it has not been in their power to do more towards forwarding the objects of the association. They, however, venture to hope, that when the difficulties they have had to encounter are taken into consideration, due allowance will be made for omissions. Sufficient, it is presumed, has been effected to prove that, with adequate support from the members of the profession, much may, in future, be done for the general good, by such exertions.

Dr. O'Beirne rose and moved the first resolution, viz.:—Resolved—That this Association, in its collective capacity, is unconnected with any College, Corporation, or Body, and that it is designed to advance the interests of no party whatsoever, but solely and singly to promote the welfare of the public and of the members of the medical profession, without any difference or distinction.

Dr. Jacob moved the second resolution, viz.:—Resolved—That the permanent continuance of a body capable of advising and protecting medical men in the discharge of their duties, and maintenance of their rights, suited to watch over professional interests, and to be the means of communicating between the profession and the government, is highly desirable.

Dr. Nugent, of Cork, moved the third resolution, viz.:—Resolved—That we constitute the Council of this Association as the organ of communication, on all matters concerning the interests of the medical profession, between its members and the government.

Dr. Kingsley, of Roscrea, moved the fourth resolution, viz.:—Resolved—That a General Meeting of the Association shall be held upon the last Wednesday in May, in each year, when a President, Secretary, Treasurer, and Council, shall be elected for the ensuing year.

That at every such Annual General Meeting, the name of a member shall be returned from the members of the Association in each country, or riding, or large town, to act as Secretary for such district, through whom the names and subscriptions of persons desirous of becoming Members of the Association shall be transmitted to the Central Council, and

whose duty it shall be to keep a list of the Members of the Association resident within his district, and to summon Meetings of said Members whenever directed by the Central Council, or required to do so by a Requisition signed by one-fourth of the whole number of such resident Members.

That such Secretaries of Districts shall be ex-officio Members of the Central Council.

Dr. G. W. O'Brien, of Ennis, moved the fifth resolution, viz.:—Resolved—That the objects of the Association are—

1. To form a society for the protection of Medical Practitioners in all their just and legal rights:

2. To seek for a Legislative enactment, giving a permanent constitution to the Profession, and directing a competent and uniform standard of Education, and an equality of privileges for all persons who shall, in future, be permitted to practise medicine throughout the Empire, and—

3. To secure for the public, in future, the services of a scientific Apothecary, who shall be protected in the exercise of his Profession, and not engage in the practice of Medicine.

Dr. Purcell, of Carrick-on-Suir, moved the sixth resolution, viz.:—Resolved—That the Council be directed to prepare a Petition to Parliament, for the enactment of a measure which shall provide for the regulation and control of the Medical Charities; also praying that adequate funds shall be provided for their support.

Dr. Jagoe, of Kinsale, moved the seventh resolution, viz.:—Resolved—That the Council be directed to prepare Petitions to Parliament for suitable remuneration to medical men, when called upon to perform public services in courts of justice.

Dr. Cranfield, of Enniscorthy, moved the eighth resolution, viz.:—Resolved—That the Council be instructed to prepare Petitions to Parliament, praying for attention to the neglected subject of Medical Police, and for encouragement to medical men disposed to engage in the investigation of all matters concerning the public health; and that copies of these different petitions shall be forwarded to each Local Secretary, in order to procure signatures in all parts of Ireland.

Dr. Cane, of Kilkenny, moved the ninth resolution, viz.:—Resolved—That the following plan of General Medical Reform shall be supported by this association:—

The establishment, by law, of one Faculty, having three branches, one in each of the capitals of the Empire; such Faculty to include all Practitioners in Medicine, both Physicians and Surgeons: each Branch to be governed by a Representative Council, elected periodically by and out of, the whole body of the Faculty

in each Kingdom. The Councils to have the power of making regulations for the government of the Profession, and also of admitting Members: no person being permitted to practise without being examined and licensed as a Member of the Faculty. The regulations of the three Councils to be similar and uniform, general conferences being, from time to time, held in order to preserve uniformity. This 'One Faculty' plan contemplates the establishment of a class of scientific Apothecaries to be examined and licensed as such under the direction of the Councils; also, that no Practitioner "shall be permitted to sell drugs, or to compound medicines, unless prescribed by himself, or by others in consultation with him, and for his own patients, except in rural districts, and by special license."

Mr. Donovan's proposal for establishing a College of Pharmacy, might, with some modifications, be made to coincide with this portion of the 'One Faculty' plan. Institutions for teaching not to be connected with the licensing body of the faculty.

Professor Williams moved the tenth resolution, viz.:—Resolved—That the Secretary, with Dr. Nugent, Dr. Healy, and Dr. Dunn, be a deputation to wait on Mr. Warburton, and other members of the legislature, to explain the views of this Association respecting Medical Reform.

Dr. Healy, of Ennis, moved the eleventh resolution, viz.:—Resolved—That Richard Carmichael, Esq., shall be President, that John Macdonnell, M.D., shall be Treasurer, and Henry Maunsell, M.D., Secretary for the ensuing year.

Dr. O'Reardon, of Tipperary, moved the twelfth resolution, viz.:—Resolved—That James O'Beirne, M.D., Arthur Jacob, M.D., Sir James Murray, M.D., Francis White, Esq., Professors Hargrave, Williams, Porter, and Benson, O'Bryen Bellingham, M.D., Hamilton Labatt, Esq., Richard Tuohill, M.D., S. Walker, M.D., Dundalk; Robert Barlow, M.D., Mullingar; John Morrison, M.D., Newry; John Colvan, M.D., Armagh; Henry M'Cormac, M.D., Belfast; Robert Cane, Esq., Kilkenny; Richard Maffett, M.D., Glasslough; Joseph Ferguson, M.D., Mullingar; Richard Cranfield, M.D., Ennis-corthy; J. Waters, M.D., Roscrea; M. D. Nugent, M.D. Cork; R. Corbett, M.D. Innishannon; Edward Jago, M.D., Kinsale; John Lynch, M.D., Charleville; John Purcell, M.D., Carrick-on Suir; John Wilkinson, Esq., Limerick; William Bell, M.D., Clonmel; John Jacob, M.D., Maryboro'; Dr. W. Murphy, Cork; together with the Local Secretaries, shall be Members of the Council for the ensuing year, with power to add to their numbers.

Sir James Murray moved the thirteenth resolution, viz.:—Resolved—That the marked thanks of the Association are due

to the President, R. Carmichael, for his fearless and independent advocacy of the rights of the profession during the past year.

It was then resolved that the thanks of the Association were due to the talented and fearless Editors of the MEDICAL PRESS, for their unceasing efforts to promote the welfare of the profession.

The business having been concluded, the meeting then separated.

To the above information we have to add that Mr. Carmichael has placed £500 at the disposal of the Council of the Medical Association of Ireland, for the purpose of aiding in carrying out a measure of medical reform.

SMALL-POX AND VACCINATION.

On the 17th, Sir James Graham moved, in the Commons, that the House do now resolve itself into a Committee on the "Vaccination Bill." Mr. Wakley moved, as an amendment, that the "Small-Pox Prevention Bill" be substituted in place of the above.

After some discussion the House divided, when there appeared for the motion 56; against it 39; majority for Sir James Graham's motion 17. The House then resolved itself into a Committee on the Vaccination Extension Bill.

On the 1st Clause, empowering poor-law guardians to contract with their medical officers for vaccination, being read, Mr. Wakley (after some discussion principally between him and Sir James Graham) proposed to leave out the words "medical officers appointed by the board of guardians," and to insert "medical practitioners, or any of them, within the several unions:" this was carried by 33 against 24.

The 2d Clause was postponed.

The 3d Clause provides that officers engaged in the administration of the poor-laws, should, for the purposes of the act, conform to the instructions of the poor-law commissioners. An amendment on this was moved by Sir B. Hall, and supported by Mr. Wakley, but the original clause was carried by a majority of 44, viz. 51 against 7.

Clauses 4, 5, and 6, were agreed to, without amendments; but on Clause 7 being proposed, which requires the guardians to transmit a copy of every contract to the poor-law commissioners, who may annul the same, Mr. Grimsditch and Mr. Wakley opposed the clause, moving an amendment, which, however, was negatived by 29; viz. 40 against 11.

Clauses 8 and 9 were agreed to.

Clause 10, prohibiting unqualified persons from inoculating. Mr. Wakley moved, as an amendment, that the following

words be introduced, viz: "That any person guilty of such misdemeanour shall be liable to be proceeded against, and convicted summarily before two or more justices of the peace, in petty sessions assembled, and committed for one month to hard labour." The Attorney-General suggested the omission of the words "hard labour," and the clause, thus amended, was agreed to. The remaining clauses were then agreed to, and the report ordered to be brought up next day.

ABORTION OF FIVE FÆTUSES IN THE THIRD MONTH.

DR. E. KENNEDY presented a specimen taken from a female who had borne five children at once, and had aborted in the third month of pregnancy. The specimen consisted of three distinct ova, with their appendages. Two of these were double, and contained twins, the third was single; each of the double ova were enveloped in a common membrane, and had a common placenta; the single ovum had its own placenta and membranes. Some persons were disposed to question the occurrence of these multiparian births, but there had been two or three well-authenticated instances of five children at a birth. One of these occurred lately at Naples, the other about twelve years ago in North America. It was a curious fact, that in the matter of multiparian births, Ireland preponderated. The proportion of twin cases in this country is one in sixty; in London it is one in ninety-one; in France, one in a hundred and forty; in America (where there is a large proportion of Irish settlers), it is one in seventy-five. It was also a curious fact, that the female who gave birth to the five children at once, in America, was an Irish emigrant. The female from whom the specimen was taken aborted with bearing-down pains about the third month of her pregnancy, most probably from over distension of the uterus. She had laboured under constant nausea, a symptom which appears to be one of the most ordinary signs of multiparian pregnancy. (Museum Lying-in Hospital.)—*Dublin Journal of Medical Science.*

PRIZES—COLLEGE OF SURGEONS.

To the Editor of the Medical Gazette.

SIR,
THE members of the College of Surgeons must, I feel sure, be glad to observe the increased pecuniary value which the Council have added to the different prizes.

Permit me, however, to suggest that it is not the pecuniary value *alone* which is looked up to by the aspirants, but the honour and eclat attending the success, which is much more eagerly sought after.

Would it not, therefore, add to the inducement to compete for the Jacksonian or other prizes, if they were awarded in person by the President in Council to the successful candidates, instead of a simple notification being sent by post from the secretary, that the prize was awarded to Mr. —, and that he might get it any day by calling for it.

Another suggestion I would offer likewise is, that the testimonial should be such as the possessor of it would be proud to shew to his friends, with the College arms appended to it, instead of the written certificate of the secretary.

This might likewise be granted to the former prizemen, or at least to such as choose to apply for it, as, in contested elections, the possession of such a certificate might prove of infinite value.

A.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, June 4

Josias King.—Samuel Hodgkinson, Morton Grange, Notts.—William Hilbers, East Indies.—Robert George Fothergill Smith, Portsmouth.—Charles Lawrence Bradley, Greenwich.—John Brunton, West Bromwich.—Thomas Dobson, Leeds.—Allan Borman, Tetney, Lincolnshire.—William Henry Ashley, Brighton.—William Morgan, Breconshire.

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, June 16, 1840.

Age and Debility	22	Hooping Cough	1
Apoplexy	2	Indigestion	1
Asthma	1	Inflammation	5
Consumption	26	Bowels & Stomach	1
Convulsions	19	Brain	3
Croup	1	Lungs and Pleura	2
Dentition	2	Liver, diseased	2
Dropsy	4	Measles	1
Dropsy in the Brain	2	Morification	1
Erysipelas	1	Small-pox	4
Fever	9	Sore Throat & Quinsey	1
Fever, Scarlet	10	Unknown Causes	88
Fever, Typhus	1		
Fistula	1	Casualties	6
Heart, diseased	1		

Increase of Burials, as compared with } 22
the preceding week }

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

June.	Thermometer.	Barometer.
Wednesday 10	from 52 to 69	29.03 to 29.97
Thursday 11	45 71	29.93 29.94
Friday 12	59 68	29.91 29.83
Saturday 13	56 69	29.87 30.04
Sunday 14	46 73	29.99 29.90
Monday 15	48 73	29.93 29.86
Tuesday 16	57 73	29.79 29.78

Prevailing wind, S W.

Except the 12th, generally clear. A little rain fell on the 11th, 12th, and morning of the 16th.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, JUNE 26, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISEASES OF BONE, *continued*.—CYSTS—
SOFTENING—RICKETS—BRITTLINESS
—SPINA VENTOSA—OSTEO-SARCOMA.
Their Nature—Causes—Symptoms—Treat-
ment.

DISEASES OF THE ARTICULATING SYS-
TEM.—Sprains. *Their Nature and Treat-*
ment.

CYSTS IN BONE.

THE maxillary bones are the most frequent seat of cysts; but they have also been found in the long bones of the limbs, as well as in the bones of the vertebræ. According to Dupuytren, there is much variety in the contents of these cysts: they are either solid or fluid, but, most frequently, they are fibro-cellular masses; they may be like grains of rice; they may be hydatids.

Causes.—The causes which favour the development of these cysts are generally very obscure; they have been known to succeed to a blow—to incomplete extraction of a tooth. Their bulk is variable; it may be that of a musket-ball, or that of a hen's egg, or the fist: they occasion some pain, and interfere with the functions of the organ on which they are seated. The pain is sometimes heavy; sometimes acute; rarely lancinating. The tumefaction is a consequence of the increase of the cyst; the bony parietes are gradually thinned; they then yield to pressure almost like parchment. At first there is

danger of mistaking such a tumor for osteo-sarcoma; but you can scarcely fail from a single symptom in detecting the disease. Press upon it, it will yield, and again return upon itself just like parchment; but this is not the only guide; the adjoining tissues are not degenerated. If there be any doubt, an exploring puncture should be made; this, with the crepitation, can leave no doubt about the kind of disease with which we have to do. If doubts still exist, as to whether the affection be the one we are considering, or osteo-sarcoma, they should soon be dissipated, because from an early period osteo sarcoma is characterized by lancinating pains and varicose tumefaction, by change in the adjoining structures, and by its inequalities. In these cysts, on the contrary, the surrounding parts do not participate in the disease; their surface is smooth and equal, and they are more or less indolent; and the crepitation, such as I have described it, is not met with in osteo-sarcoma. This distinction is very important, because the two diseases differ essentially in their consequences. In the one case, the tumor may be removed, and the disease be cured; but in the other this rarely happens.

Prognosis.—The prognosis in these cases is favourable: they may be cured by operation: they may, it is true, repullulate when not completely removed; but this should not happen. If the tumor have caused considerable deformity, all traces of the disease may not be removed; but this is a trifling inconvenience, and cannot be compared to the consequences of the disease when left to take its course.

Treatment.—The nature of the disease being ascertained, the best means of cure is complete destruction. This should be done in the following manner:—An exploring puncture is first made, to ascertain the nature of the contents; an incision is then made along the tumor: when the inferior or superior maxilla is affected, this

incision may be made within the mouth. Arrived at the centre of the disease, it should be extirpated, and this is not difficult, for the affected bone readily yields before the knife: sometimes, when the cavity is exposed, a red-hot iron is applied over the surface to destroy it; or it may be stuffed with lint, so as to excite inflammation of those parietes, and destruction of the membrane by which they are invested, and in a reasonable time the cavity is filled up. Sometimes counter-openings are necessary. Before the diseased structure is removed or destroyed, we must endeavour to ascertain the cause of it, because these structures have a strong tendency to repullulate.

SOFTENING OF BONE.

It is to an Arab physician, Gschuzius, that we are indebted for the first observation of the disease termed Osteomalacia, or softening of the bones, as presented in adults: his patient was a man who was carried about on a palm mat, "because he had no bones, except those of the head, the neck, and the hands;" the other parts, from the clavicle to the feet, could be twisted like a garment; the tongue was the only part subject to the will. Since his time, a great number of cases have been published; among others, that of a woman, of twenty-one, who, after a fever, experienced great pain over the whole body; her limbs began to fail, and, in eighteen months, she lost a foot in height. Upon the inspection of her body after death, all the bones, except the teeth, were as soft as wax. The case of Madame Supiot is well known. She had borne four children; after each some accident happened; first lameness; then pain and swelling of the legs; lastly, paralysis of the legs, followed by involuntary contraction of the muscles of the lower extremities, which gradually brought the legs into such a position, that her head rested on her left foot as on a cushion; other parts of the body suffered, and ultimately the deformity became so excessive, that probably nothing like it has ever been seen. Many of the bones were softer than cartilage. The bones of the carpus alone preserved their figure and their situation, and were much less softened than other bones. At the commencement of the disease her urine was white, earthy, and presenting the characters of gypsum. Frank mentions the case of a woman of fifty-five, of high stature, who, in a few years, was reduced to that of a dwarf. Numerous examples might be given of women who, after parturition, have had the bones of the pelvis so disfigured as not to allow of the passage of the child. Although the greater number of cases on record refer to women, some have occurred in man: such was the

case of Gschuzius. In the Copenhagen Acts is the case of a man of thirty-two, who, at twenty-four, had severe pain in the limbs, followed by softening; the head became as round as a ball; the legs were scarcely six inches long. Another very singular case is related by Lobstein of an unmarried English lady, of thirty-five, in whom no osseous substance was found, except at the articular extremities of the long bones. The analysis made by Bostock (*Med.-Chir. Trans.* vol. iv. page 38) of softened bones shewed that the earthy portion did not exceed one-eighth of their weight, whilst, in healthy bones, it is more than a half.

Now is the softening of the bones, in after life, the same disease as the softening of childhood? Many authors have confounded them. John Hunter thought the analogy between them was very strong. He thought that in adults the softening proceeded to the greatest extent; that the bones became almost as flexible as tendons; whilst in children they always retain enough of calcareous matter to preserve their form and a portion of their solidity. P. Frank goes farther, and maintains that there is no difference; that the one is the rickets of childhood; the other of adult life. I confess my inability to agree with this opinion: the softening of adult life is a graver disease than rickets; it is produced by causes other than those which occasion rickets. Van-der-Haar speaks of a girl of fifteen who, after an exanthemic fever, had erysipelas of the right arm and left leg, which ended in suppuration; incisions were necessary; and it was discovered that there was not only tumefaction of the bone, with caries, but such a softening of the tibia and fibula, that if the leg were raised by supporting the heel, these bones bent. After an appropriate treatment they regained their solidity. Here was a case of acute softening succeeding to, or determined by, the exanthemic fever, producing in the bone a true chemical decomposition, which, in rickets, is the slow result of perverted nutrition.

It is scarcely necessary to insist further on the difference between these two affections. In rickets, do we find such a complete softening—such a commencement of dissolution of their substance? Does it attack children so suddenly? Does it succeed to such, apparently, slight causes? Still I do not think that in a pathologico-physiological point of view, there is an absolute disparity between the two diseases. In both there is a deranged nutrition; in both there is, probably, exaggerated action in the absorbents; the subtraction of phosphate of lime from the bones, and its presence in the urine, seems to prove this. Both occur at periods of life when a sort

of revolution is taking place. Thus, in rickets, the disease attacks the fœtus; from this results monstrosities and deformities, to which the bones of the head are subject, congenital deformities of the spine, twisting of the limbs; it attacks children at the epoch of dentition—a second period of excitement. It attacks adults, and generally succeeds to some acute disease—to rheumatism, to laborious parturition. The observations of Caspari show that women especially suffer; and this, as compared with men, in the proportion of ten to three. I admit, then, this kind of identity of cause; but I shall incline to the opinion that they are different diseases.

If the phenomena of this disease be curious, the restoration of the softened bone to their former state, and their new solidification, is not less worthy of attention. In the *Phil. Trans.* vol. xli. p. 616, is the case of a man of 60, in whom almost all the bones began to soften at 18. Now all these bones became solid anew; but all the joints were ankylosed. A second example, described by Pott, in the same volume, p. 816, is that of a young man, whose sternum, ribs, some of the vertebrae, the two femurs, and the iliac bones, after having been softened, recovered their original solidity.

The bones are too little accessible to the direct action of the therapeutical agents to be immediately the object of curative indications. Our attention should be directed to avoid all that is susceptible of increasing the curvatures which may already exist. When the tendency to soften is dissipated, mechanical means, methodically employed, and associated with hygienic or medicinal means, are frequently useful.

RICKETS.

Much difference of opinion exists among medical men as to what should be understood by the term rickets; the general symptoms of the affection, the nature and frequency of the deformities which characterise it, and upon the different alterations which it produces in the osseous system. In consequence of the etymology of the word, the term has been applied to deformities of the spine, whilst those deformities are rarely produced by the disease to which they are attributed. A great many authors have called all cases of softening of the bones in adults, rickets. The case of Madame Supiot, described by Morand, is in point. Again, it is not difficult to find persons who confound rickets with scrofula; and yet, of the twenty cases detailed by Ruzf, not one was affected with scrofula. In fact, neither the case of Supiot, nor a multitude of others, presented any evidence of this condition.

We apply the term, as it was done by Glisson, Mayon, and Petit; and for the purpose of making evident what we mean, it is necessary to refer to the external characters, the mode of attack, and of development of the disease; the age, the sex, the portions of the osseous system which it necessarily occupies; the general symptoms which precede and accompany its evolution—the changes of form and texture which it produces in the osseous tissues; the circumstances under which it is developed, and its presumed cause; the conditions of curability, and the means of treatment.

I hold, then, that rickets is a disease of childhood; of Ruzf's cases, thirteen were under two and a half, four under three, two under five, and one under eleven years; that it is caused or accompanied by a change in the plastic qualities of the blood; that it becomes more fluid, and upon this probably depends the suspension of the business of reparation; and, perhaps, the starting point is deranged nutrition, dependent upon bad or improper food, or depraved digestion.

The deformity of the osseous system is generally developed from below upwards, from the bones of the leg to that of the femur, from thence to the pelvis, and from the pelvis, simultaneously or successively, to the different parts of the upper extremities, the thorax, the vertebral column, and the cranium; yet the arms occasionally suffer first; and I apprehend this is principally owing to the habit of nurses taking children up by the arm. Ruzf believes the order of frequency to be different; he thinks the ribs suffer first, then the forearm, humerus, femur, leg, clavicle, and spine; and he may be right in those cases where children have not begun to walk.

The texture of rickety bones varies with the period of development of the disease: at first there is an effusion of sanguinolent matter in all the interstices of the osseous tissues, in the cells of the spongy tissue, in the medullary canal, between the periosteum and the bone, and in every part of the osseous tissue where nutritive vessels are distributed; the osseous cells are enlarged, the resistance is diminished, but the chemical composition is not changed. The second period is that of deformity: at the same time that the osseous frame-work loses consistency and softens, it becomes flexible. The matter deposited in the cells shews a tendency to become organised; the organised spongy matter is especially abundant between the periosteum and the external table of flat bones, as well as between their laminae. In the third period the newly organised tissue passes into the condition of a compact tissue; and this addition of new to the

old tissue increases the bulk of certain portions of the bone; but what is singular, we may see the mechanism employed by nature to cure the affection: in many cases we discover a new bone placed at the concavity of curvatures in the old one.

The period when children suffer from this disease is from six months to three years; it may not be presented before the second dentition, or even before puberty.

The long bones suffer most frequently: their extremities enlarge, their shafts are thinned and curved, either in their natural direction or in another. Most commonly the femur is arched inwards or backwards, so that in walking the legs are directed outwards, the knees inwards, the leg forming an angle with the thigh. The bones of the arm are also curved in two directions, inwards or forwards. These bones may not only be curved but flattened, and it has been remarked by Mr. Stanley, that what they gain in surface they lose in thickness.

When rickets affects young children, in whom the fontanels are still membranous, complete ossification of the bones of the cranium is retarded; the softest yield to the impulsion of the brain, which is singularly developed and hypertrophied; but this great increase of the brain and the cranium, in certain rickety children, is not always accompanied, as some persons have asserted, by a corresponding development of the intellectual faculties. If rickets be not manifested until after the ossification of the fontanels is complete, the volume of the head is not sensibly increased, but the cranial bones sometimes attain great thickness. The change in the pelvis is, in females, a matter of most serious consequence, especially as relates to the functions of the uterus; the deformity may be principally directed upon any diameter of the outlet.

Symptoms.—These changes are not brought about without much general disturbance. Rickety children are pale, thin, with little muscular development; the skin is flaccid, they perspire with little exertion; while asleep the head is generally covered with perspiration; their digestion is bad, and serous alvine evacuations are frequent; and if the thorax be much deformed, the respiration is impeded, and the circulation is quickened. Still, uncomplicated rickets is not a mortal disease, but as the particular conformation of the chest increases the gravity of all their diseases, they often die from diseases which in other persons might not have proved fatal. It is for this reason that so many rickety patients die in their infancy.

Causes.—Simple uncomplicated rickets is not so rare as many persons imagine, but most frequently it is preceded, or accom-

panied, by other diseases—bronchitis, enteritis, pneumonia, eruptive diseases, rheumatism, and so on. What the immediate cause of the disease may be I cannot say. Many causes have been given, such as change of blood, dentition, and so on; but it is hardly likely that rickets, a disease consisting in so evident a change, and which is always presented in the same way, should be the result of so many different causes. Certain it is that it is seen most frequently in families; for instance, all or nearly all the children of a family may suffer; it may be transmitted to a second generation; if there be the disposition, any of the so called causes may light it up. The disease is not unfrequent in Holland, the north of France, and England. So rife was it in England in the 16th century, that it was called the English disease; it is more frequent in large towns than elsewhere: insufficient or bad food certainly appears to contribute to its development.

Treatment.—In treating this disease, two points must be kept steadily in view; that the treatment must vary with the period of the disease, and that the same means are not applicable to the period of softening, and that when the ossification is taking place. In either case it is empirical; those who attribute it to the want of a calcareous secretion introduce it ready formed into the stomach; these will be found to disturb the stomach, and to do no good as a remedy for the softening: the same may be said of madder and antisyphilitics. Experience has shown that the powers of nature are sufficient, when the strength can be restored; therefore our object should be to endeavour to restore the power of vital organs. If the disease be complicated, the superadded disease should be remedied, bearing in mind that it is essential to keep up as much as possible the strength of the patient; tonics and excitants under all forms are most necessary; they should not be confined to the interior: sulphur or sea-bathing, and dry rubbing, with a dry bracing air, will materially assist internal means. It is essential to avoid milk, fruit, or farinaceous diet; if at the breast, the child must not be too long suckled; more animalized food than milk is required, such as eggs, animal jellies, and so on; if older, roast meat, with wine, answers well. As to the deformities, it is essential again to watch the two periods of the disease.

In the first, so long as the softening is not arrested, walking should be carefully avoided, because the weight of the body will only serve to increase the deformity; motion in the open air is essential, but not upon the legs. In the second period, when the progress of softening is arrested, and the phosphate of lime accumulates in great

quantity in the curvatures, so as to resist the weight of the body, walking may be allowed, but if of an age to take that exercise, none is so beneficial as swimming; and it will be found that the more exercise the child can take, the more promptly are the efforts to restore the bones set in action. With respect to machines, they have been condemned by very able surgeons; but it may be worth while to inquire whether they should be so absolutely proscribed as they advise. When the curvature of a long bone is not great, it may be quickly remedied as the child gains power, but where the tibia forms an angle with the femur, nature cannot remove it; and in such cases mechanical assistance will be found useful, though it will rarely remove a very decided curvature.

BRITTLENESS OR FRAGILITY.

In museums it is not at all uncommon to see bones of unusual lightness and fragility. In some cases so great is their fragility that if we press upon the extremity of a long bone it breaks down under moderate pressure between the fingers; the same thing may happen in the carpal, tarsal, or vertebral bones. The middle, compact portion of long bones, resists such pressure, but if an attempt be made to bend it, it may at once snap. If we examine a long bone in this state, we find the medullary cavity greatly enlarged at the expense of the compact portion; the parietes are extremely thin and brittle. The ribs often fracture with great facility; and when the cranium is similarly affected, the diploë seems to be entirely lost, and the two tables to be reduced to one.

This condition of the osseous system is particularly seen at the two extremities of life—infancy and old age, and it may be so decided that the slightest causes occasion fracture. Goodwin mentions the case of a woman who in the course of two years had no less than twenty-three fractures, without any other apparent predisposing cause than old age.

In this disease tumefaction of the bone is not seen, unless very near joints; and the periosteum is unchanged. Some persons have thought the condition depended on an unwonted activity in the absorbents, by which a certain portion of gelatine was removed; but Troja proved that the brittleness was neither dependent on a superabundance of phosphate of lime, nor a diminution of gelatine. The medulla does not preserve its ordinary consistency, but nothing proves that the change in the bone begins with this change in the medulla. After age, the other probable causes of this disease are cancer, scorbutus, arthritis, and rickets. There are on record many examples of the influence

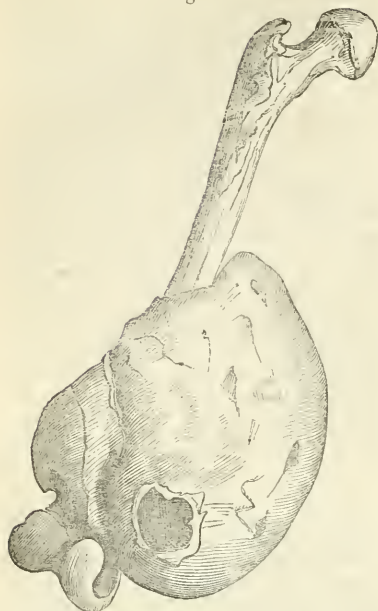
of cancer in producing this condition. Hamilton mentions the case of a woman with mammary cancer, who fractured her thigh in rising from her chair. Strack observed a similar case in which, after operation, the patient fractured her thigh in bed, while sneezing. Many specimens of brittleness occurring in scorbutic patients are to be found in museums. Brittleness caused by arthritis is peculiar, its predilection for joints, and its complication with taphaceous concretions and ankylosis, are among its characteristics. If we examine the bones of persons who have suffered long from gout, we find them thin, light, and brittle, and false ankylosis usually exists at many joints. Saillant many years ago particularly directed attention to this.

Fracture is very common in rachitic children; fragility, therefore, may be associated with softening. It is probably often connected with organic changes: the celebrated case of the widow Melin is an illustration of that.

SPINA VENTOSA.

Although the disease to which the Arabs, Rhases and Avicenna, attached the term *Rihh Alschukhah*, and which has been rendered *spina ventosa*, be not very rare, yet much difference of opinion exists with regard to its nature. The name was criticised by Severinus, who, believing that the disease was exclusively proper to infants, and that it had always its seat around the joints, had termed it *pædarthroacis*: his disease was no doubt rickets. Boerhaave believed it to be a disease "when the corruption begins in the marrow, and extends from within outwards" Augustin defined it to be an internal inflammation, accompanied by total or partial intumescence of the bone, with severe pain and tumefaction of the soft parts, in which the bone, as well as the soft parts which cover it, constitute a hard, unequal, and sometimes monstrous mass, and in which the primary texture of the bone is completely altered. Voigtel's definition is very similar. Boyer's is simple: he says, it is an affection of cylindrical bones, in which the parietes of the medullary canal undergo a slow distension; sometimes to an enormous extent; at the same time, that they are greatly thinned, and even pierced at many points, as in the accompanying specimen from Liston's excellent treatise on Operative Surgery (fig. 1.). Sir A. Cooper considers *osteo-sarcoma* and *spina ventosa* as varieties of the same affection, to which he applies the term "fungous exostosis" of the medullary membrane. My own impression is, that it is a fungous transformation of the membrane which lines the interior of bones. At the point corresponding to the disease, the medullary

Fig. 1.



canal is enlarged like the globe at the end of the barometer tube, or like fig. 1. Mr. Gulliver has a beautiful specimen of the disease taken from a fox, in which the femurs are distended like bladders, the interior having been filled with a species of sero-sanguinolent matter. In all cases, this kind of fungous growth is seen, and as it can only result from changes brought about in the medullary membrane, I conclude that the canal is distended, as this fungus increases in bulk, the bone gives way before it, as the antrum often does before a fungus developed in that cavity.

The disease has usually been considered as peculiar to long cylindrical bones, such as the femur and tibia, and especially near the knee; the humerus, near the shoulder joint, and the bones of the forearm, near the elbow joint. Now though spina ventosa has a marked predilection for the long bones of the limbs, yet it does not exclusively belong to them; it may attack the maxilla, the ribs, the vertebræ, the cranial bones. It is frequently associated with caries. The soft parts which surround the diseased bone always participate in the disease when complicated with caries; they inflame and ulcerate, become fistulous, and yield a sanious pus. When it is not accompanied with caries, if the tumefaction be considerable, we find the muscles in a remarkable state of expansion and induration. If, for instance, the disease affects the femur, the cruræus, and

the vasti, the triceps and the short head of the biceps, are transformed into a semi-cartilaginous or lardaceous tumor. The semi-tendinosus, membranosus, gracilis, and sartorius, are strongly extended over the sides of the tumor, but preserve their natural structure. The inter-muscular cellular tissue, confounded with the muscles immediately surrounding the femur, is, like them, degenerated. The subcutaneous adipose tissue is changed; the skin is thinned and glistening. If the disease occupy the tibia, the skin adheres to it, and becomes brownish.

True spina ventosa is never congenital; but it attacks persons of all ages: in this respect, Boyer thought it presented a remarkable difference. Up to the age of puberty, it affects the metacarpal, metatarsal, and phalangeal bones. It depends at this time evidently on scrofula, is developed, and subsists long without pain, and frequently terminates in necrosis of the affected part; this is the first kind. The second, more rare, but more dangerous, especially affects adults, is generally developed near the extremities of long bones, the humerus, the femur, the bones of the forearm, those of the leg: it is often preceded by severe pain—often long continued, which the patient compares to a thorn piercing the marrow.

All that we know of the pathogenesis of spina ventosa is, that a morbid principle, syphilitic or cancerous it may be, impresses upon nutrition a vicious direction; that the osseous cells, as well as the canal, enlarge, so as to cause the bone to resemble a sponge. Why, in the different cases, is the pain so different; in one case so severe; in another so trifling? Because, I apprehend, the one affects more decidedly the centre of a canal than the other; in the former, the distention of the medullary canal is rapid, and the pain severe; physiologists are generally agreed, that the medullary apparatus is the most sensitive part of the bony tissue, and this is directly implicated. In the other, the bony tissue itself is more particularly affected, and the pain is less. But whichever part is affected, sooner or later, great disturbance is set up, low fever is developed, and the strength is exhausted.

Symptoms.—The first symptom, usually observed in spina ventosa, is a deep-seated severe pain; sometimes continuous; sometimes in paroxysms, which the patients liken to a thorn forced into the medulla. In other cases, though still deep-seated, it is so obtuse that the patient scarcely notices it; but whatever its character, it is often for a long time the only symptom by which the disease is manifested. Sooner or later tumefaction comes on, and the bone may acquire an enormous bulk.

The dilatation to which the bone is subject is peculiar, though very near the joint the articulating surfaces do not participate in it; and the tumefaction is so abruptly developed, that a little way above and below the point the shaft of the bone is natural: in fact, it seems as if distended by insuflation. At an early period of its development the bone is as uniform and as hard as the healthy portion, and the disease may at this period be suspended; but, in most cases, the consistency of the tumefied bone is changed, and by the touch we can distinguish softened points which give a sensation of fluctuation. The skin may inflame and ulcerate at these points, a more or less fetid sanies is discharged, and the openings are soon filled with fungous excrescences, which are usually painful, and bleed from slight causes. If we pass a probe through one of these openings, it gets at once to the centre of the bone, having with very little pressure got through the fungous mass.

Diagnosis.—The diagnosis of this disease is usually not difficult. The kind of pain which accompanies it enables us to distinguish it from exostosis: if, however, it be indolent, much difficulty will be experienced. Osteo-sarcoma bears some resemblance to it in form and seat; but the tumefaction of the former is more unequal and lobular, and its consistence, though firm, does not equal the hardness of bone. Again, the pain of osteo-sarcoma is lancinating, like cancer, and, in its progress, it is more rapid and acute than spina ventosa; add to which, the constitution gives way sooner, and assumes a cancerous diathesis. Spina ventosa is always a grave disease, because in the greater number of cases so much local and general disturbance is excited, that the death of the patient is the consequence.

Treatment.—As to treatment I have little to say: we have very little power of controlling the disease. All that we can do is to lessen pain by leeching, by fomentation, and by narcotics, externally and internally; but these means rarely stem its progress, it goes on until the existence of the patient is threatened. It is recommended that we should then cut down upon the part, open the cavity of the dilated bone, and destroy with the actual cautery the fungous mass it contains. Such an operation I do not advise you to undertake, because, if the patient get through the primary suffering, he may sink under the long and abundant suppuration necessary for removing the bone, which has been thus deprived of life; and there is no security that the disease will not be reproduced; and at last, supposing all these dangers to be avoided, it is evident that the patient will have a deformed

limb, which may be incapable of serving him. From all this it seems to me to result, that in all these cases amputation of the part is the only remedy which promises success.

OSTEO-SARCOMA.

Osteo-sarcoma, says Boyer, is an alteration of the osseous tissue, in which, after having experienced distension, it degenerates, and is transformed into a substance very variable in character, but more or less analogous to that of cancer of the soft parts, whilst the local and general symptoms present a still more striking resemblance with those of that disease. Sir A. Cooper termed it fungous exostosis of the medullary membrane, believing it to be primarily seated in that membrane. I have two objections to make to Boyer's definition: the increase of bulk does not constantly accompany nor precede this disease; the disease is not always and essentially cancerous.

All bones appear to be subject to this disease, yet we more frequently see it in the bones of the face, those of the base of the cranium, the long bones of the extremities, but above all the ossa innominata, which of all bones are the most frequently attacked.

There are two species of osteo-sarcoma: in the first the disease extends from the soft parts to the bone; this is commonly seen in the face, from fungous disease in the antrum; in the second the bone is the primary seat of the disease, and the soft parts suffer secondarily. When the disease has made much progress, the osseous tissue has more or less completely disappeared; in its stead we find a homogeneous, greyish, or yellowish, lardaceous substance, a section of which resembles the hard-boiled white of egg, or old cheese; its consistency, however, is very variable, soft in one part, hard in another, from that of cartilage to that of pap or jelly. The surrounding soft parts which have shared in the affection participate in the same alteration; muscles, tendons, ligaments, vessels, all are confounded in the same mass, all have suffered the same degeneration.

Causes.—Syphilis, scrofula, rheumatism, and even external violence, have been pointed out as causes of osteo-sarcoma. Now although these affections may complicate the disease, it is not proved that they can produce it. External violence, a fall or a blow, seems in many cases to be the exciting cause of its development. It seems to be a matter of doubt whether osteo-sarcoma ordinarily commences either in the medullary or periosteal membrane, or whether it arises in the bony tissue itself: cases may be adduced to favour one and the other of these opinions. To the

latter opinion Becker and Lobstein incline. They have seen osteo-sarcoma, by continuity of tissue, communicate the same change to the periosteum of an adjoining bone, without its undergoing any change. In a case of osteo-sarcoma of the tibia, the soft parts between the two bones of the leg were disorganised, as well as the periosteum of the fibula, whose substance, instead of being softened, was harder than natural.

Symptoms.—Very deep-seated continued obtuse pain, gradually becoming more acute and more severe, sometimes indicates the existence of the disease long before any increased bulk is apparent. In a short time these pains acquire characters which mark cancer, become, with irregular intervals, more intense, and as suddenly lacerating, as if produced by an electric shock. The constitution suffers, emaciation comes on, with a yellowish or leaden tint of the surface; the pulse is quick and small, with fever. The part becomes tumid; the tumor is immovable, adherent to the bone; compression produces no decrease in bulk, neither does it excite pain; the tumor is almost always irregular and lobular. At first the tissues move freely on its surface; but as it increases, they become adherent to and soon identified with it. As it approaches the surface the symptoms become more marked, the skin gives way, fungi sprout out, which ultimately form the fundus of a carcinomatous ulcer. The pain and general disturbance commonly keep pace with the tumefaction and destruction of adjoining parts, until at last even narcotics have little power to calm them; the patient gets no sleep, the appetite is lost, diarrhoea comes on, emaciation increases, and death follows. It is singular that the progress of osteo-sarcoma, or cancer of bones, is generally much more rapid, much more difficult to retard, than cancer of soft parts.

Diagnosis.—Cases have occurred where, from the vicinity of arteries, the disease has been mistaken for aneurism; in others, where a sensation of fluctuation has caused them to be mistaken for abscess; but a knowledge of all the circumstances of the case will usually prevent such mistakes.

I recollect a case where a young man, in apparently good health, fractured the inferior extremity of the femur: it was treated in the ordinary way. When the apparatus was removed, and he rested on the limb, he complained of pain at the injured point: it was soon evident that there was no union; the knee and the lower part of the thigh were largely tumefied, and the swelling gradually extended to the groin, and acquired an enormous bulk: it was hard, and not very sensible to

the touch; the subcutaneous veins were dilated; motion at the knee remained; but he could not walk without a stick, and then with difficulty: the tumor increased, the pain and sleeplessness kept pace with it. The limb was amputated at the upper fourth, the parts were brought together, and all pain immediately ceased. When the dressings were removed, union had partially taken place, and in about six weeks the whole was cicatrized. Fourteen years afterwards there was no return of the disease. The tumor weighed thirteen pounds; it was an enormous sac, with thick, sarcomatous, coriaceous parietes, with here and there osseous particles; the fluid it contained weighed five pounds and a half, was glutinous, like thick syrup, without smell or taste; in fact, bearing a strong resemblance to the *tissu colloide* of Laennec.

Prognosis.—The prognosis in this disease is always unfavourable. The disease will be fatal to the part itself, if not to life; and as the disease seems to have the fatal prerogative of rapidly changing the constitution, so as to render probable the reproduction of the disease even when it is removed, we cannot too soon take away the tissue it may have attacked, for each day's delay only increases the risk.

Treatment.—How can an organ, which has undergone an osteo-sarcomatous disorganization, be restored to its natural condition? No local means would, I apprehend, accomplish this object, because the source of the disease is not there, and the whole of the economy, it is probable, participates in it. If any good can be done, it must be by modifying the entire system. Some persons believe this possible; in the present state of our knowledge I do not. It has been suggested, that small doses of the oxymuriate of mercury might be found useful, either in or with decoction of sarsaparilla; but this will not cure osteo-sarcoma. Local means recommended consist in the application of leeches; if there be pain, of blisters, to be kept open by mercurial and savine ointment. The time, however, spent in using these means, often gives much reason for regret, because the disease has been advancing, and greater mutilation and chance of reproduction are the consequence. Sir A. Cooper and Lucas have tied arteries going to the part, but without success.

If a limb be affected, resection or amputation must be performed, and if the latter, the operation should have a joint between it and the disease. If either of the maxillæ suffers, it should be excised, as far as possible from the diseased point; in spite even of this precaution reproduction is frequent. But it not unfrequently happens that we are prevented from amputating

by finding lymphatic ganglia beyond the point diseased, resembling cancer, or fungus hæmatodes; or similar tumors may be detected in other parts of the body. In that case, and even when the cranium or the ossa innominata suffer, the disease is incurable, and we can only hope to prolong life by regimen, by narcotics, and other similar means.

DISEASES OF THE ARTICULATING SYSTEM.

The joints are subject to violence, which may produce a temporary or permanent change in their articular surfaces; the first are termed *sprains* or *strains*, the second *luxation* or *dislocation*.

The effect of violence, insufficient to produce luxation, may occasion distension or destruction of the ligamentary tissues, so as to constitute a sprain.

Those joints whose motion is very limited, and whose dislocation is unfrequent, are often the seat of distension or rupture of those tissues; but where the latitude of motion is considerable, we always find a certain number of muscles, capable of assisting the ligaments in resisting violence. Thus, the frequency of luxations bears a direct relation to the extent and variety of motion of a joint; the opposite state is the condition which favours sprains. It is absolutely true that the ginglymoidal articulations are more frequently affected by sprains than the orbicular. Some moderns go so far as to say that luxation at the wrist cannot happen, and that luxation of the foot cannot happen without fracture of the leg; but in both of these articulations sprains are frequent. Sprains differ much, according to the condition of the patient, the importance of the joint which has been injured, and the violence and the extent of the disorder which follows. If, in a person who has no scrofulous tendency, the ligaments be merely dragged, we may say the sprain is slight; it is more serious if the fibres have been ruptured; still more so when tendons, nerves, or important vessels, have suffered.

Symptoms.—The immediate consequences of a sprain are those which result from injury of the ligaments and the cellular tissue; they consist in an acute pain at the moment of the accident, which rapidly increases, and is soon followed by considerable tumefaction. The tumefied parts are at first elastic, and not very sensible to the touch, the skin is natural, and the pain is only increased by motion; but soon the swelling becomes renitent, and the pain more acute, so severe indeed that in many cases the slightest motion is insupportable, and certain changes in the dimensions of the limb are apparent, which seem to demonstrate that inflammatory action is excited, even in the joint itself; the thigh becomes

longer, the trochanter more prominent, in consequence of violence which has produced a sprain at the hip joint: this would indicate tumefaction of the head of the femur, the cotyloid cavity, or their cartilaginous surfaces. When things come to this point, it is rare that fever proportioned to the intensity of the irritation which has occasioned it does not supervene; this reaction is seldom violent, but it may be prolonged. In that case, and particularly if improper motion has been permitted, the tumefaction subsists, the skin reddens, and becomes hot, the pain is pulsative, rigors are experienced, and at one or many points around the joint fluctuation is manifested, and spontaneous openings may follow, through which pus, without or with synovia, may be discharged; colliquative symptoms may come on, and the patient may sink exhausted with pain and profuse suppuration: or the suppuration may lessen, the openings become fistulous, exfoliations may take place, the soft parts gradually lessen: the pain abates, ankylosis destroys motion, and terminates the disease. But a sprain is rarely attended by such serious consequences in ordinary cases: some days after the development of tumefaction the pain diminishes, the ecchymosis is dissipated, the swelling lessens, and motion is gradually restored. All these things render it impossible to deny that a more or less intense articular inflammation may and often does exist. With the exception of the synovial membrane, the articular apparatus is not very sensible to irritation determined by mechanical causes, and this is no doubt the reason why the consequences of sprain are usually not serious; why it so rarely happens that luxations are followed by dangerous inflammation, though the disturbance of parts may have been great. But the obscurity of the vital functions of those organs renders the work of resolution difficult: that is no doubt the reason why articular pain, once developed, is often long continued, and with great difficulty dissipated. It follows from what has been said, that we should anxiously endeavour to dissipate the ordinary effects of sprains, and this more particularly when, from the scrofulous diathesis or other circumstances, we have reason to apprehend a tendency to white swelling.

Treatment.—It must be evident to you that, in treating this accident, we must seek to prevent or to subdue inflammatory action at the injured joint. The ligaments are often destroyed; we must endeavour to bring about union, and we must seek to restore freedom of action at the joint. Cold water is much employed for the purpose of preventing the development of inflammatory action; it should be continued for many hours, otherwise, instead of

preventing the afflux of blood to the part, we favour it, by the reaction which follows. Some persons strongly recommend ice-water, but I have on a former occasion stated my objections to it; still I do not deny that it is one of the most powerful sedative agents we possess, and that I have seen almost miraculous effects to follow its judicious employment; but if the joint be deep-seated, or the injury very violent, it will be rather injurious than useful. My objection to it is, that it is rarely properly employed. It is applied at a very low temperature; it is renewed perhaps in an hour; by that time the temperature has been raised probably twenty degrees, and a corresponding reaction has come on; so from hour to hour there is alternate contraction and relaxation of the blood-vessels, and detrimental consequences follow; therefore it is that, if cold be used, I prefer it in the form of irrigation; but then it must be closely watched, or gangrene may follow. Local and general bleeding are commonly resorted to, and often with the best effects: if there be severe pain and sense of distension, we maintain perfect quiet, raise the limb so as to prevent stasis at the part. When by the use of these means, associated with emollients or narcotics, the irritation is calmed, pain and tumefaction diminished, we may proceed to use resolvent agents. During the treatment great care must be taken to avoid motion at the part, because it will prolong the irritation, and prevent union of soft parts. In the present day it is becoming the fashion, and a good plan it is, to preserve immobility by means of starch or white of egg bandage, or moulds of plaster; but these apparatus should not be applied until the immediate inflammatory action has subsided. Velpeau is an advocate for immediate compression in any case, to prevent the development of inflammatory action. I think more experience is necessary to fix the value of this agent. If the ankle be the joint affected, the patient should not attempt to walk until the pain and irritation are entirely dissipated, and then it is good to have the part well rolled, to assist the ligaments. Sometimes, after this kind of injury, the ligaments remain tense and rigid, so as to interfere with ordinary motion: in those cases douches and frictions are the best remedies. In all these cases the ability of the practitioner consists in distinguishing the moment when each remedy should be employed; when the inflammatory condition has sufficiently abated to allow of the beneficial employment of stimulants, which become necessary to remove that state of atony which almost always succeeds to this kind of injury.

PHYSIOLOGICAL OBSERVATIONS
ON
EYES OPERATED UPON FOR THE
CURE OF STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

SHOULD the following physiological observations appear to you of sufficient interest for your readers, an early insertion in your valuable journal will greatly oblige, sir,

Your obedient servant,
AUG. FRANZ, M.D.

19, Golden Square, June 16th, 1840.

The following experiments and observations were made upon the seven cases of strabismus cured by the new operation, and reported in the *MEDICAL GAZETTE* of April 17th, May 23d, and June 12th, and embrace several interesting physiological inquiries relating to the functions of the retina.

In these experiments I assume the right eye to be operated upon for an inversion, and to be the subject of examination.

Experiment 1.—The person being placed with his back towards the light, closes his left eye, and looks with the right straight and horizontally before him, without swerving either to the right or left. If now a somewhat light object, *e. g.* an ivory paper-knife be held at some distance, exactly opposite the pupil of this eye, it will be more distinctly seen, when in this position, than when held somewhat to the left side, but it will be still more distinctly seen if placed somewhat to the right; there is moreover on this side a particular spot where the object is most distinctly seen, corresponding to that point of the retina on which the images of objects were formerly projected while the squinting yet existed. This point of the retina is of course the point of the most acute sensation, and all points situated around this diminish in sensibility in an exact ratio to their distance from it; and for this reason an object held exactly opposite or to the left side of the eye, and projecting its image on these less sensitive points of the retina, is less distinctly seen. Thence it follows that the point of most acute sensation in the retina of an eye, affected with inversion, is not situated in the centre of the posterior

hemisphere, as in a perfect eye, and that the axis of vision, which in a perfect eye corresponds with the axis of the eyeball, differs materially from it in a squinting eye, inasmuch as it has the direction of a line drawn from this abnormal point of most acute sensation through the centre of the pupil, and thus deviates from the axis of the ball; if the right eye be affected with inversion towards the right, if the left towards the left. The degree to which this irregularity may prevail in a squinting eye varies according to the extent of squinting; to ascertain which with precision, I have contrived an instrument by which I am enabled to determine both the degree of irregularity and the extent to which the squinting previously existed according to a mathematical scale, and which therefore may be termed *Strabismometer*.

This instrument is very simple both in its construction and in its application. It consists of a semidisk, 15 inches in diameter, equally divided by a mesial line, each half being again subdivided into 90°, as radii diverging from the centre of the semidisk to the periphery. A tube, 13 inches in length and half an inch in width, running from the periphery towards the centre, is fixed on the mesial line. The person who is the subject of experiment places his eyes on a level with the centre of the disk, so that in looking straight through this tube the centre of the pupil or the axis of the eyeball is directed parallel with the mesial line of the disk, whilst the experimenter can observe through the opposite extremity of the tube whether the eye is kept steadily in this position. A second portion of the apparatus consists of a short tube, 3 inches in length, the one extremity half an inch, and the other one inch in width, and moveable upon the semidisk, to concentrate towards the pupil the rays of light reflected from a light object, painted on a darkened screen. This screen, being situated behind the short tube, forms with the tube one piece, as it is made to slide in a groove, running towards the centre of it in order to approximate the object to be seen, or to remove it from the eye, according as this may be far or near-sighted. This second portion of the instrument is now to be moved upon the semidisk, according to the radii marked on it, until it arrives at that degree where the object painted on the screen is most distinctly

seen by the eye looking through the fixed tube. The number of degrees between the mesial line and that radius or degree where the object is most distinctly seen, determines the difference between the axis of vision and that of the eyeball, the distance of the abnormal point of the most acute sensation of the retina from the centre of the posterior hemisphere of the eye, and also the extent of the former inversion. In conducting this experiment the head of the person is enveloped in a dark curtain attached to the semidisk, to exclude those rays of light which might interfere with the progress of the experiment.

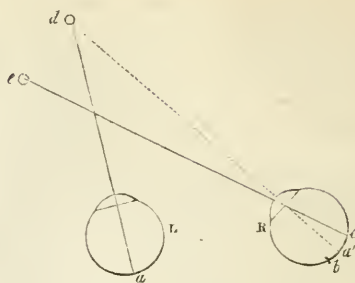
The above-mentioned seven cases were thus examined with the *Strabismometer* in the first week of the operation, when the functions of the retina are yet exactly the same as during the existence of squinting, for at a later period the retina accommodates itself in its functions to the new position in which the eye is placed by the operation. The number in each of these cases was found as follows:

1st Case,	36 degrees.
2d ...	28
3d ...	30
4th ...	25
5th ...	32
6th ...	26
7th ...	28

By the experiment just explained I have convinced myself that the abnormal point of most acute sensation in a squinting eye has nearly the same power of sensation as this point in its normal situation in the sound eye. The weakness of sight which is observed when, on closing the sound eye, the affected one is brought by an effort of will to bear upon an object, appears therefore to me to be dependent, in a great measure, on the circumstance only, that the image of the object which is seen, while the eye remains in this unusual position, is projected on a point of the retina situated at some distance from the abnormal point of most acute sensation, viz. on a point less sensitive. I moreover found that in the same ratio in which the point in the centre of the posterior hemisphere of the squinting eye acquires a greater sensibility, after having been placed by the operation in a position favourable for this development, the former, i.e., the abnormal point, decreases in acuteness of sensation.

When now the point of most acute sensation is by constant and free use of the eye in a condition favourable for which the operation has placed it, fully established it in its proper place, the sight is, in this eye, as perfect as in the other one; the axis of vision is one and the same with the axis of the eyeballs, and the visual functions are then in a perfect condition. But although the organ of vision is by the new operation at once placed in a proper position, the visual functions and the power of sight acquire but slowly perfection and acuteness. In my first two cases, which I operated upon on the 10th of April, the point in the centre of the posterior hemisphere has by this time gained in its sensibility a great ascendancy over the former abnormal point, which is, however, not yet entirely lost, as I have ascertained by the Strabismometer, an object being now seen by it with a greater distinctness, when placed in the proper, than in the former abnormal direction of vision. The one person who, on closing the sound eye, could, previous to the operation, distinguish large objects only, and was totally unable to read even the largest print, can now read a print of moderate size; and the other, who also could not read a very large print, now reads even that of a small size with facility.

Experiment 2.—For this experiment the eye must be examined a few days after the operation, and the person is directed to look with both eyes steadily at an object. If now the object is held to the right side of the eyes, it is seen single by all persons operated upon. If held exactly opposite to the eyes it is seen double by those only who have suffered an inveterate inversion to a great extent, but if the object is held to the left side it is seen double by all who have undergone the operation. The image, appearing at the right, is moreover the most distinct, the effigies at the left is less distinct; and if the left eye is closed, this latter is only seen by the right eye or the one operated upon. This double vision, and the difference in distinctness of the two images, may be explained in the following manner, as illustrated by the diagram subjoined. The image of an object (*d*) is depicted in the left eye (*L*), on the most acute sensation (*a*); the mind therefore perceives the impression, made by the object on the retina, in this eye distinctly; in the



right eye (*R*) the image of the object is projected on the point (*a'*), which is a less sensitive point of the retina, because situated at some distance from the abnormal point of most acute sensation (*b*), and therefore the mind perceives the impression of the object in this eye less distinctly. Farther, the image of the object (*d*) is projected on the centre of the posterior hemisphere of both eyes, in (*L*) on (*a*) and in (*R*) on (*a'*). In the left eye the point (*a*) is the point of most acute sensation, and also that point where the optic axis intersects the retina; the object is therefore seen in the direction of the optic axis, viz. in the proper place (*d*). In the right eye the point (*a'*), on which the image falls, is situated at some distance to the right of the abnormal point of most acute sensation (*b*). But as the mind is conscious that the point of most acute sensation in a perfect eye is always situated in the centre of the posterior hemisphere, the impression which is made by the object in (*a'*) suggests a sensation to the mind as if the image were at the same distance to the right of the centre (*a'*), as it is in reality situated to the right of the abnormal point of the most acute sensation (*b*); the mind therefore perceives the image in (*c*), and the object is consequently seen, not in the optic axis, but in a direct line drawn from the point (*c*), through the centre of the pupil, which places the effigies of the object in a different spot, that is, to the left of the real object, in (*e*). The distance at which the effigies is placed to the side of the real object is dependent on the distance at which the abnormal point of most acute sensation (*b*) is situated away from the centre of the posterior hemisphere (*a'*).

Hence it is evident that the effect of double vision, which is observed after the operation for the cure of stra-

bismus, is produced by the two images being differently situated with respect to the two points of most acute sensation of the retinae, although similarly situated with respect to the two centres of the posterior hemisphere of the eyes; that the difference in distinctness with which the two objects are seen by either eye is caused by those points of the retinae on which the images fall being different in their degree of sensibility: the impression made by the object seen produces consequently a sensation in the retina and a perception in the mind in the first case according to the situation of the image, and in the second according to the degree of sensibility; and lastly that, if the left or sound eye is closed, the distinct or real object must disappear, and *vice versa*.

[To be continued.]

OPERATION FOR CATARACT.

To the Editor of the Medical Gazette.

SIR,

SHOULD you consider the following case worthy a corner in the MEDICAL GAZETTE, I shall feel obliged by your inserting it.—I am, sir,

Your obedient servant,

G. HARVEY,
Surgeon.

Carth Hedingham, Essex,
June 7, 1840.

Daniel Maymond, aged 59, an agricultural labourer, of good health and very spare habit of body, has been affected with cataract of the right eye rather more than a year. The iris contracts and dilates freely and regularly; and although he cannot distinguish objects, is sensible to light. The sight of the left eye has lately become very dull and imperfect, so much so as to render him incapable of following his usual occupation; but no opacity is at present visible.

Under these circumstances I resolved to operate upon the right eye, after the manner proposed by Dr. King (vide MEDICAL GAZETTE, July 28, 1838, page 701; and Sept. 22, page 1009). Having previously given him a few doses of aperient medicine, and desired him to abstain from beer and other stimulants, I dilated the pupil by applying a little extract of belladonna between the eye-

lids by means of a camel's hair pencil; and this day, May 30, 1840, punctured the sclerotica with the curved needle of Scarpa, at rather more than the eighth of an inch from the cornea, near the inferior extremity of its vertical diameter. The needle passed in without the slightest difficulty; and when it appeared about the centre of the pupil, I gave it a rotatory motion, with the view of lacerating the capsule; but the cataract proving a firm one, the curved point of the instrument entered its substance, from which I was unable to extricate it. I found I could easily draw the lens down, or move it in any direction, so firmly was it fixed on the point of the needle. I therefore slowly drew it down to the bottom of the posterior chamber, and on withdrawing the needle the lens remained in its new situation, leaving the pupil perfectly clear and regular. The patient exclaimed that he could see the window, and that he had suffered little or no pain. The eye was instantly closed, and covered lightly with a thin handkerchief, the room darkened, the patient ordered to remain in bed, take nothing but gruel or tea, and on no account to admit any light to the eye.

After describing the manner of introducing the instrument and lacerating the anterior layer of the capsule, Dr. King proceeds to say, "In general the only remaining part of the operation may be said to be the withdrawal of the needle, which I effect by gently drawing it, with some slight rotations, back through the same path by which it was made to travel on to the pupil; for, almost always, the lens immediately follows its point, in a manner which I cannot but compare to that in which a piece of steel obeys the magnet, and lodges in the inferior external and anterior part of the vitreous humour, close to the little puncture made in the sclerotic, and just behind the posterior chamber of the eye."

I am inclined to believe that, in this mode of operating (which I greatly prefer to any other), the descension of the lens is always caused by the needle puncturing and drawing it down, and not by forming a passage through which, as the Doctor afterwards observes, "it falls almost by its own weight."

I hope Dr. King will excuse this remark, and if I am wrong in my conjec-

ture, be kind enough to set me right. I now proceed with my case*.

May 31st.—On lifting the shade for a moment the patient said he could distinguish my features. Pupil clear but contracted; scarcely any inflammation of the conjunctiva; has suffered no pain.

The handkerchief to be kept constantly wet with a cold lotion. Calomel, gr. iij. statim. Magnes. Sulph. ʒij. after two hours, in a cupful of gruel. The room to be kept darkened. Diet, tea and gruel.

June 1st.—No inflammation except two or three enlarged vessels near the puncture; suffered a little pain last night, which was relieved by a discharge of fluid from between the eyelids; pupil still contracted: bowels moved four or five times.

Applicetur Ext. Belladonnæ palpebris.

2d.—Eye looks very well; pupil dilated; says objects appear very white and brilliant.

On reflection I think the belladonna ought not to have been applied yesterday. The contraction of the pupil was nature's own curtain, partially closed for the express purpose of preventing too much light being admitted to the retina. It is very different in iritis, where belladonna is applied to enlarge the pupil, and prevent improper adhesions forming between the contracted iris and the capsule of the crystalline; but after the operation for cataract, the anterior portion of the capsule having been removed, there is nothing for the iris to adhere to; therefore the belladonna is not only useless, but likely to do mischief.

6th.—The eye is to all appearance perfectly well, but I have desired him to wear the shade sometime longer, to avoid stimulating drink or food, and to let me see him after a few days.

MALFORMATION OF ŒSOPHAGUS.

To the Editor of the Medical Gazette.

SIR,

I AM induced to transmit the accompanying case for insertion in your excellent journal, in consequence of its extreme rarity, and under the conviction

it may prove interesting to your numerous readers, should you deem it worthy of publication.

In the month of August 1839, Mrs. P. the mother of four healthy children, was delivered of her fifth, a fine, well formed infant, after a perfectly natural labour of a few hours' duration. When in due time the infant was put to the breast, it was observed that the nipple was scarcely retained in the mouth beyond a minute, when the little creature became apparently convulsive, and almost instantly rejected the nutriment which it had taken. On my subsequent visit I was made acquainted with the above particulars, when I felt disposed to assent to the opinion expressed by the mother, that flatulency might be the cause of the symptoms, and accordingly prescribed a simple carminative. This was almost immediately rejected, as the milk had been, the infant notwithstanding manifesting the greatest eagerness to supply its instinctive wants. Inferring the existence of some obstruction in, or malformation of the Œsophagus, I attempted to pass a common bougie, which however proceeded only for a very short distance, and then became curved upon itself, apparently not having arrived further than the commencement of the Œsophagus. Matters went on in this way for six days, no other evacuation having taken place from the bowels than the meconium, and the infant continuing to apply its mouth to the breast with no other result than that of a slight convulsive paroxysm so soon as the pharynx became filled, and the immediate repulsion of its contents. Early on the morning of the seventh day it died, when a post-mortem examination disclosed the existence of little more than the membranous pouch of the pharynx, which terminated in a cul-de-sac a little below the cricoid cartilage, no trace of the Œsophagus being visible beyond this part. The stomach presented no deviation from its ordinary form and dimensions, with the exception of its cardiac orifice, where there existed a slight bulging at the part corresponding with the termination of the gullet, and which was firmly united to the diaphragm. Further, a probe, introduced at this aperture, could not be made to pass into the stomach. Between this point and the sternum not the slightest trace of Œsophagus, or any bond of connexion whatever with the pharyngeal

* From this paragraph we perceive that our correspondent is not aware of Dr. King's disease.—ED. GAZ.

portion, existed. The stomach contained nothing but air and a little mucus; the other viscera appeared perfectly normal.

In juxtaposition with the foregoing case of defective conformation, I may mention an instance lately communicated to me by Mr. Heath, a highly respectable practitioner of this town. In this, the infant, which was of ordinary size, presented symptoms very analogous to those above described, and survived until the eighth day. On inspection after death, the duodenum was found obliterated to the extent of an inch or more, no further malformation having been observed.

I will close this communication with an extract from Meckel's Manual of General, Descriptive, and Pathological Anatomy, vol. iii. page 375, to which I was induced to refer, thinking it not improbable that I might therein meet with examples corresponding with that first described. In place of this, however, I find only the following remarks bearing upon the point in question:—"It sometimes, though rarely happens, that the pharynx and œsophagus terminate in a cul-de-sac, the one at its lower part, the other superiorly, in consequence of a primitive defect of conformation. In the first case the cavity of the mouth at least is almost always developed in an imperfect manner, and the lower jaw is either entirely, or in a great measure wanting. The same thing occurs when the pharynx opens into the neck by too narrow an orifice." Hoping that I shall not be considered as trespassing too far upon your columns, by requesting the insertion of the preceding,

I remain, sir,

Your very obedient servant,

THOMAS MELLOR.

Chorlton-upon-Medlock, near Manchester,
June 17th, 1840.

SINGULAR CASE OF IMPERFORATE VAGINA,

AND VICARIOUS MENSTRUATION FROM THE
BLADDER (?) WITH UNINTERRUPTED
REGULARITY FOR 27 YEARS.

To the Editor of the Medical Gazette.

SIR,

I BEG to send you the inclosed, if you think it will interest your numerous readers.—I have the honour to be, sir,

Your obedient servant,

RALPH MAPLETON.

St. Thomas's Hospital,
June 5, 1840.

Ellen S—n, æt. 40, and married ten years, presented herself as an out-patient at St. Thomas's Hospital, under the care of Dr. Cape, on Friday, April 24, 1840. She complained of a hard and painful tumor, about the size of a melon, situated in the uterine region, which could be felt above the pubis. She had no discharge, and her general health was not impaired. On examination per vaginam being attempted, no vagina could be found. She was then requested to retire to one of the female wards, where she submitted to an ocular examination; the labia, nymphæ, clitoris, and all the external organs of generation, were quite normal, with the exception of the vagina, which was totally imperforate, not amounting even to a cul-de-sac; being perfectly flat and unyielding, with a granulated red surface. On examining per anum, the tumor could be very distinctly felt, painful on pressure, and apparently of a subcartilaginous character. She has menstruated regularly ever since she was thirteen, the period lasting four days, and of the usual quantity. She was ordered

Potassi Iodidi, gr. v.; Tinct. Hyoscyami, ʒss.; Mist. Camphoræ, ʒiss. ter die.

She continued this medicine for a fortnight with considerable benefit; for though the tumor did not diminish in size it was much less painful; but as she complained of pain in the head, and giddiness, the hyoscyamus was omitted, and tinct. lavend. co. ʒss. substituted. This she continued for a week, when the headache and giddiness disappeared, but the tumor was more painful: she was therefore ordered the original medicine.

On Friday, the 15th May, the catamenia being present, it was thought a good opportunity for ascertaining whence the discharge flowed, as, on the previous examination, the only aperture visible was the orifice of the urethra; when it was seen distinctly exuding guttatim from the meatus urinarius.

Since then she has continued the medicine with much benefit; suffering much less from pain and pressure, and being able to take more active exercise.

STATISTICS OF SMALL-POX.

To the Editor of the Medical Gazette.

SIR,

A LETTER recently received from Dr. Heim, of Ludwigsburg, has enabled me to fill up some deficiencies in the very valuable table to be found at p. 406 of

his great work on Small-pox, and thus to draw a comparison between the results of his experience in the kingdom of Wirtemberg and that of the Small-pox Hospital of London. Some of your readers may, perhaps, take an interest in statistical notices of this kind, and with this view I have drawn up the following tables, to which I venture to append a few observations.

Statistical Notices of Small-Pox, as it appeared in the Kingdom of Wirtemberg, 1831 to 1836.

Period.	Total Cases of Small-Pox.			Normal Small-Pox.			Abnormal Small-Pox.		
	Numbers attacked.	Deaths.	Rate of Mortality.	Numbers attacked.	Deaths.	Rate of Mortality.	Numbers attacked.	Deaths.	Rate of Mortality.
Five Years. <i>July 1831 to June 1836.</i>									
Unvaccinated, but with preceding small-pox ..	57	16	28	39	14	36	18	2	11
Vaccinated	565	107	19	528	92	18	37	15	40
Total unvaccinated	622	123	20	567	106	19	55	17	31
Vaccinated	1055	75	7	186	64	34	869	11	1
Total.....	1677	208	16	753	170	22	924	38	4

Statistical Notices of Small-Pox, as it appeared in the Small-Pox Hospital, London, 1835 to 1839.

Period.	Total Cases of Small-Pox.			Normal Small-Pox.			Abnormal Small-Pox.		
	Numbers admitted.	Deaths.	Rate of Mortality.	Numbers admitted.	Deaths.	Rate of Mortality.	Numbers admitted.	Deaths.	Rate of Mortality.
Five Years. <i>January 1, 1835, to December 31, 1839.</i>									
Unvaccinated, but with preceding small pox ..	5	2	0	4	2	0	1	0	0
Unvaccinated.....	1041	377	36	971	375	39	70	2	3
Total unvaccinated	1046	379	36	975	377	39	71	2	3
Vaccinated	748	53	7	270	46	17	478	7	1½
Total.....	1794	432	24	1245	423	34	549	9	2

1. The first reflection which will naturally occur to any one on perusing the foregoing tables is, that, in Germany,

second attacks of small-pox are ten times more frequent than in London. I am wholly unable to account for this

discrepancy. The extreme severity of these cases in Germany (which proved fatal at the rate of 28 per cent.) induces me to suspect that the fact of prior small-pox was there assumed on very imperfect evidence.

2. The second circumstance which will attract attention is the marked disproportion between the numbers of the vaccinated and unvaccinated (having small-pox) in the two countries. Out of 1600 cases in Germany, 1000 were vaccinated, and 600 unvaccinated. Again, in London, out of 1700 attacked with small-pox, 1000 were *unvaccinated*, and only 700 vaccinated. This shews how much more extensively vaccination is practised in Germany than in England.

3. It will be observed, thirdly, that the rate of mortality among the unprotected was much higher in London than in Wirtemberg. The rate of mortality is seen to have been 36 per cent. in London, and only 20 per cent. in Germany. This discrepancy may fairly be attributed to the different circumstances under which the cases occurred. The German cases happened over a vast extent of country, and were for the most part treated in private houses. The London cases were engendered in a comparatively confined locality, and treated within the walls of an hospital.

4. The fourth circumstance which will probably excite attention, will be the singular *uniformity* in the mortality of small-pox, as it occurs in both countries, after vaccination. It will be seen, that in Wirtemberg, between 1831 and 1836, out of 1055 cases, 75 proved fatal; being at the rate of 7 per cent. Again, in the Small-pox Hospital of London, between 1835 and 1839, out of 748 cases, 53 proved fatal; being also at the exact same rate of 7 per cent. This can hardly be an accidental occurrence: the numbers are too large to admit of such a supposition. There must, I apprehend, be some law of the animal economy influencing this very curious but most interesting result.

I have the honour to be, sir,

Your obedient servant,

GEO. GREGORY, M.D.

31, Weymouth Street,
June 16, 1840.

MR. NASMYTH AND MR. OWEN ON THE TEETH.

[In consequence of having received the subjoined communication from Mr. Nasmyth, we have thought it better to postpone the reply of our reviewer till next week.—ED. GAZ.]

To the Editor of the Medical Gazette.

SIR,

I HAD determined to continue to practise forbearance, and to take no part whatever in the discussion respecting Mr. Owen's plagiarisms from my writings on the teeth, which was commenced by your reviewer, in the number of the MEDICAL GAZETTE for June 5th last; but as Mr. Owen's letter, in reply, contains personal accusations against me, which I alone am able to meet, I can, of course, no longer remain silent, more especially as they can only be regarded as a continuation of the peculiar line of conduct he has thought proper to adopt with regard to me. I shall proceed at once to collect these personal charges against me, contained in Mr. Owen's lengthy and, as it seems to me, confused epistle; I shall attempt to lay them clearly before your readers.

It is stated by Mr. Owen that I furnished reports of my papers, read at the last meeting of the British Association, to the Athenæum and Literary Gazette of September last, and that the abstract just printed in the Transactions of the Association has been altered from the original papers, so as to take in Mr. Owen's more recently published views. My answer to this is, that I did *not* furnish the report to the Literary Gazette, from which Mr. Owen draws much of his pretended evidence, and that the notice of my papers, which I sent to the Athenæum, was so abbreviated and cut to pieces that I cannot be responsible for it. But, notwithstanding certain errors contained in the reports of the Literary Gazette and Athenæum (which, however, are very trifling, considering the difficulty of the subject,) and the disadvantages under which my views are there necessarily represented, I am still quite content that these views should be gathered from these journals, without any reference whatever to reports subsequently published, provided allowance is made for what are obviously inaccuracies.

racies, and an impartial judgment exercised. *The abstract of my papers given in the Transactions of the Association contains no interpolations whatever — no matter which was not contained in the papers themselves*: I wish the same could be said of all Mr. Owen's reports published in the same work. The promptness with which that gentleman at once accuses others of the practice of interpolation, appears to have its origin in the circumstance that he is far from being unfamiliar with that practice himself. I should advise him, before he again "prays" Prof. Phillips to compare my abstract for the Transactions with the reports in the Literary Gazette and Athenæum, to request the secretary to institute a similar comparison between his own abstract, in the Transactions published in 1839, and the reports given in the weekly journals, shortly after the meeting of the Association in 1838. Prof. Phillips would, by so doing, be able to make out a case of interpolation so flagrant, that all Mr. Owen's disinterested indignation against such proceedings would be perfectly explained. In the eighth vol. of the Reports of the British Association for the year 1838, p. 136, the following passage occurs in the abstract of Mr. Owen's paper.

"Purkinje and Fränkel also added to dental anatomy several new and interesting facts relating to the structure of the enamel, pointing out more especially the form and characteristic transverse striæ of the component crystals: and lastly, they determined the true osseous nature of that distinct layer of substance which had been previously known to surround the fang in the teeth of man, and which they once observed to be continued on the enamel of a human incisor. *This observation Mr. Owen proceeded to state he had confirmed, and he exhibited several sections of the simple teeth of the mammalia, in which both the ivory and enamel were invested by a layer of osseous substance, identical in its structure with the cement which enters more abundantly into the composition of the compound teeth of the herbivora.*

Not a word, however, of all this is contained in the lengthy report of Mr. Owen's paper printed in the Athenæum, which he acknowledged to me was furnished by *himself*, nor the Literary Gazette; and for the best of

all reasons, viz. that at the time when his paper was read, and the Athenæum report of it published, Mr. Owen had *never seen* the work of Purkinje and Fränkel; though in his report he would fain lead the reader to believe that he had been well acquainted with these writers in the autumn of 1838. The following letter to me shews that he did not even receive a copy of their work till the spring of 1839:—

April 1, 1839.

My dear Nasmyth,—I received from Baillière, on Saturday last, the enclosed copy of Fränkel*, and as I shall not have time to look into it till the end of the Lectures, I send it to you, knowing your anxiety to see it. I may ask for it again towards the end of June. * *

Believe me, dear Nasmyth,

Yours very truly,

R. OWEN.

After perusing this, I think you will agree that Mr. Owen is not exactly the person in whom it is safe policy to write a letter to Mr. Phillips, containing unjust accusations of interpolation against another party. Mere interpolation, however, although not to be commended, is a matter of no great consequence, unless it be adopted from some reprehensible motive. Let me state what was the motive of Mr. Owen in this particular instance. It can have been no other than that of appropriating to himself a discovery to which he had not the slightest claim, as I shall prove even by his own written admission. By his own report of his paper, read at the British Association in August, 1838, we learn that he then made no mention of the enamel-capsule, nor did he of the researches of Purkinje and Fränkel, for the very valid reason communicated above. Shortly after his return from Newcastle and the continent, however, I sent him a paper containing an account of my discovery of the enamel-capsule, which was afterwards published in the 22d vol. of the Med.-Chirurgical Transactions. This paper he returned to me with the following note, dated

December 11, 1838.

Dear Nasmyth,—Hearing that you had made inquiries about the MSS., I return them without delay. I have marked in pencil all that occurred to me in the way of amendment, and I think it will

* In which Purkinje's researches are published.

be an acceptable paper for the Medico-Chirurgical Society.—I am, in haste,

Faithfully yours,

R. OWEN.

In April, 1839, he obtains the work of Purkinje and Fränkel, and then, on preparing the abstract of his papers read at the Association in the month of August previous, he inserts a passage, in which he represents himself as having there stated that he had confirmed and followed out their researches, and anticipated my discovery of the existence of a capsular covering external to the enamel.

It is a great pity, as I have before hinted, that Mr. Owen, who, in the year 1840, displays such virtuous zeal, in writing to Mr. Phillips to prevent the reports of papers for the Transactions from being modified, so as to comprise an account of discoveries made since those papers were read, did not manifest the same laudable anxiety in the year 1839, since, at present, his ingenuous cries for justice are quite uncalled for; whereas, last year, had he prayed Professor Phillips to compare the proofs of abstracts for the Transactions with the reports published at the time in the hebdomadal journals, I might have been spared the pain of exposing what, I think, must appear to all impartial eyes, a very equivocal transaction, more especially as it was perpetrated under the guise of friendship.

Mr. Owen appears to possess certain qualities to such a remarkable extent, that he cannot imagine them absent in others: for instance, he accuses me, throughout his letter, of versatility—a quality with which I have never, to my knowledge, been before reproached, but which I am quite sure, and shall immediately proceed to render evident, he possesses in no trifling degree. In the summer of 1838, I prepared for the press a translation of the work of Professor Retzius, of Stockholm, entitled *Researches on the Microscopic Structure of the Teeth*, and advertised it for publication: this translation Mr. Owen borrowed of me in the course of the same summer. Before advertising its publication, I had inquired of Mr. Owen whether he intended to publish anything on the subject. He replied in the negative. However, as he continued to retain my manuscript of the translation of Retzius in his possession, and as other circumstances had led me to believe that he might, nevertheless, entertain the idea

of writing on the structure of the teeth, in which case I should with pleasure, as I told him, have abandoned my intention in his favour, I repeated the question in a letter, to which I received the following reply:—

July 25th, 1838.

Dear Nasmyth,—Many things have interfered to prevent my returning you the translation of Retzius earlier, but as you have not sent for it, I hope without inconvenience to you. *As I have before said, I have neither desire nor object in bringing before the public any of the general observations on the structure of the teeth, which I once hoped were new; but now perceive to be mainly anticipated by the industrious and sharp-sighted Swede.* It will obviously, however, be a source of great credit, and a matter of importance, to whoever practising in the line of dental surgery should combine these discoveries with the *practical or remedial* part of the science†. * * * * *

Believe me, dear Nasmyth,

Ever yours,

R. OWEN.

It will scarcely be believed, but it is no less a fact, that, in spite of this letter, and of my having in consequence of Mr. Owen's repeated assurances advertised a work on the subject of which the translation above alluded to was to form a prominent part, that gentleman, within about one calendar month after the date of the above epistle, not only published all the new "general observations on the structure of the teeth," but also all the "practical" deductions from them which he was capable of drawing; that is to say, besides the anatomical details, he laid before the Geological Section the deductions from them bearing on natural history generally, which I had already alluded to in my advertisement; and before the Medical Section he treated the subject "combining these discoveries with the practical or remedial part of the science." For proof of this, the reader has only to refer to the *Athenæum* of September 1st, 1838, and to the *Literary Gazette* of September 15th, 1838, where the "elaborate and voluminous" reports of his papers, read at the British Association, on the *Structure of the Teeth*, are published. What renders

† The remainder of this letter I omit, as it contains matter which Mr. Owen wished to be considered confidential.

this proceeding still more remarkable is, that he gave his "analysis of the laborious and accurate microscopical observations of Professor Retzius, as related in the original Swedish Memoir of that author," (vide *Athenæum*,) a memoir with which he was only acquainted through the translation he had borrowed of me, which he had never asked permission, and had, therefore, no right to make use of, and which he had returned to me, as the reader has seen from the above note, with an assurance "that he had neither desire nor object in bringing before the public any of the general observations on the structure of the teeth." I think your readers must allow that I have now established my point, and that Mr. Owen is, indeed, versatile with a vengeance.

The appearance of his "voluminous" reports naturally vexed me not a little. I was indignant, that a person, calling himself my friend, should publicly make use, for his own advantage, and without my leave, of a manuscript which I had prepared and advertised for publication; but, nevertheless, I remained silent on the subject, because I hoped that his interference was now, at any rate, at an end, and that from him I had no further competition to expect, as he, indeed, gave me to understand was the case. However, I was disappointed. Having once broken his promise, he was not to be deterred from aggravating the offence. It would be wearying your readers were I to follow him through all the evasive windings of his course—from the time when he had "neither desire nor object to publish," to the day when the advertisement of the first part of a bulky work on the subject issued from M. Baillière's shop. Suffice it to say that, at first, he was "persuaded" to publish; then he was "determined to publish," but only on a limited scale; until, finally, he resolved not only to give to the world the whole subject, and nothing but the whole, but also to render his work "as generally useful as possible." Throughout his whole correspondence with me, he has shewn himself to be nothing if not versatile—to use no harsher term.

The merits of the question respecting his recent plagiarisms I leave for your reviewer to decide on. All that I can here say, with respect to it, is to repeat that I am content that the reviewer should rest his case on no other documents than

the reports in the *Athenæum* and *Literary Gazette*, incomplete as such reports must necessarily be, however carefully made. Thus Mr. Owen's charges of interpolation and versatility fall to the ground, were they not otherwise absurd: as it is, they are doubly futile. I am sorry that he has made them, because, by so doing, he has forced me to show that the facility with which he has recourse to them seems to originate in his having practised both to perfection himself.

Your obedient servant,

ALEX. NASMYTH.

George Street, Hanover Square,
June 22d, 1840.

IODINE IN HYDROPHOBIA.

NOTE FROM DR. RANKIN.

LOOKING over some old numbers of the *LONDON MEDICAL GAZETTE*, I observe two cases of rabies, reported by Dr. Hawkins and Mr. Curling, which strongly resemble a case of supposed incipient hydrophobia which came under my care in 1836, and which was cured by iodine. The patient was a sepoy of 51st N. I., who had been bitten about a month before. The wound (in the leg) had a dark and indolent appearance, with rough and elevated edges. The pain, extending up the limb, was so intense as to prevent all rest, even with the aid of opiates, and, a day or two after admission, large buboes appeared in the groin of the affected leg. This visible cause of absorption suggested to me the use of iodine, which was immediately given, in doses of ten drops, four times a day, with marked benefit almost from the commencement, the buboes and pain gradually subsiding. The patient came into hospital on February 5th, 1836, and was discharged on the 12th March; the bite having healed very reluctantly, and only by the continued internal administration of the iodine; nitrate of silver, and other external applications, producing no effect. I have not since had an opportunity of testing the remedy further: the superintending surgeon, on seeing the case, declared his conviction that it was hopeless. The sepoy, Rugheen Ling, is still doing his duty in the regiment, at Barruckpore.

G. R.

Calcutta, April 15, 1840.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abrégier."—D'ALEMEERT.

The Principles and Practice of Obstetric Medicine: comprising the Structure of the Female Generative System, the Process of Parturition in all its Details, the Management of the Puerperal State, the Physiology and Diseases of the unimpregnated Generative System, the Physiology of Conception, and the Diseases of Utero-Gestation. By JAMES BLUNDELL, M.D., late Professor of Obstetric Medicine at Guy's Hospital. Carefully revised and corrected, with numerous Additions and Notes, by ALEXANDER COOPER LEE, and NATHANIEL ROGERS, M.D., Member and late President of the Hunterian Society of Edinburgh, and Corresponding Member of the Medico-Chirurgical Society of Dublin. 8vo. pp. 1155. London, 1840.

It has rarely fallen to our lot, as medical reviewers, to meet with a work so full of sound practical instruction, and, at the same time, so guiltless of unnecessary amplifications, as the one now before us. Indeed, it should rather be called "a Cyclopædia of Practical Midwifery;" for every author of eminence, who has contributed any thing worth knowing on the subject, has been heavily taxed in the preparation of this volume; and yet, in justice to the editors, we must acknowledge, that while no superfluous matter has been introduced, the materials—varied as they are in their nature and sources—have nevertheless been arranged and combined in so skilful a manner as to impress us with a strong sense of their clearness, conciseness, and intelligibility.

Were we merely to regard this volume as a new edition of Dr. Blundell's excellent obstetric work, it would be entitled to our warmest recommendation, as the contribution of one of our best teachers on that subject—a teacher who, to an extended practical knowledge that few can equal, added a classic elegance of style, which rendered his lectures valuable for the sterling value of their materials, and pleasing for the almost poetic fervour which pervaded

their diction. But the present work, although it bears his name, and consequently contains all his valuable instructions, is entitled to our consideration on other grounds; we therefore propose briefly to examine the materials of which it is constituted, and the manner in which the editors have performed their delicate and important task.

On the subject of classification, we cannot do better than let the editors speak for themselves. They tell us, in the Preface, that they "have arranged the work in two principal divisions. The first, consisting of three parts, is purely *obstetric* in its character, and is consequently the most important; while the second, including the last two parts of the work, embraces the physiology and diseases (functional and organic) of the female generative system, during the successive periods of female existence, and in all circumstances." In this arrangement we fully concur, as it appears to possess advantages which do not belong to any other; for the subjects of parturition and female generative physiology and pathology are so essentially distinct, that no advantage can possibly arise from the manner in which they are jumbled together, in most works on the subject.

The first part, consisting of 84 pages, contains a description of the bones, ligaments, and articulations of the pelvis; the obstetric properties of the pelvis; the structure of the pelvic viscera; the obstetric characters of the fœtus, and the manner in which it is transmitted through the pelvis: giving a comprehensive view of the mechanism of all the parts concerned in parturition, and therefore forming the most appropriate prelude to the second part, which is devoted exclusively to the description of the process of parturition and all the circumstances attendant on it. This part is by far the most bulky, extending to upwards of four hundred pages, and contains the most important part of Dr. Blundell's lectures. It embraces, besides, a full and minute description of natural parturition, and of all the complications and difficulties which may arise during its progress. We would more particularly direct attention to the chapters on flooding, transfusion, and the employment of instruments, as containing much valuable information and useful cautions (that cannot be too often repeated) against the rash and

dangerous employment of artificial aids to a process, which, in the vast majority of instances, is purely natural, and requires no assistance. We cannot refrain from giving the following quotation, as eminently characteristic of Dr. Blundell's style of instruction:—

"When, from large experience and much reflection, you have formed for yourselves better rules of guidance, then, by all means, and not till then, let these now given be laid aside as superannuated and defective. Nothing can be more abhorrent from my wishes than to exercise over the mind any influence which does not emanate from truth and reason. Be that far from both you and me! There is not, perhaps, any intellectual habitude more certainly preventive of our progress in solid knowledge, than that which leads a man indolently to neglect the exercise of his own observation and reason, and to adopt servilely the opinions of those who have gone before him. Observe for yourselves; think for yourselves. He is surely less than the least of all philosophers, one who is not worthy to be called a philosopher, who does not inculcate these maxims. Think for yourselves, then;—not arrogantly; not inconsiderately; not invading those regions of thought which lie beyond the sphere of human understanding; but on topics within your reach, with observation and reflection deep and broad, think for yourselves. Never bury in indolence that inestimable gift of nature, so much insulted and disparaged, reason; *lux, lumenque vitæ; divinæ particula auræ*;—the fair mother of philosophy—the brightest and noblest inheritance of the human species."—P. 125.

The third part, on puerperal diseases, extends to 120 pages, and bears evidence of extraordinary diligence and research having been bestowed on its preparation. It commences with an introduction on "Puerperal Diseases in general," from the pen of Dr. M. Hall; which is one of the clearest and most comprehensive sketches we have ever read. The article on "Puerperal Fever" has been completely remodelled; and, from the extensive additions which have been made from the most valuable sources, is well deserving of an attentive perusal. It contains also important articles on "Intestinal Irritation;" "Effects of the loss of blood on the Puerperal State;" "Puer-

peral Mania and Phrenitis;" "Slight Febrile Affections from mixed causes;" "Structure and Diseases of the Mamma;" and "The Effect of previous Disorder of the general Health on the Puerperal State;" every one of which, strange to say, had been passed by in silence by Dr. Blundell, when treating of puerperal diseases. We consider, therefore, that the editors have done good service by the important and judicious additions which they have made to this part. The following quotation is selected from a number which present themselves, as eminently characteristic of the valuable practical hints with which it is interspersed:—

"Our systems of nosology have, I am persuaded, greatly erred, in attempting to separate diseases from each other, and describe them as distinct, when they far more frequently occur in conjunction; so that the mind of the medical student is not at all prepared for the cases which most frequently occur to him, when he first enters upon practice. A little experience teaches him the difficulty, nay, the absurdity, of attempting to give each individual case a name, or to put it down in a list of diseases. Each patient, on the contrary, presents to him a new congeries of symptoms—a new complication of diseases or disorders."—Page 557.

The fourth and fifth parts, which extend to 500 pages, contain a full description of the physiology of menstruation, generation, conception, and all those affections which are peculiar to the female organization; indeed, they might with great propriety form a separate volume. To attempt an analysis of them would extend our notice to an undue length; we shall, therefore, content ourselves by stating, that Dr. Blundell's lectures on these subjects form, in many instances, a mere skeleton, or outline, to be filled up with materials derived from Sir C. M. Clarke's work on the "Diseases of Females," Montgomery's "Signs and Symptoms of Pregnancy," Goode on the "Diseases of Women," Naegle on "Obstetric Auscultation," and many others. Of the manner in which it is executed, we cannot but speak in terms of high commendation, in which we think that all who read the book will join.

One other feature remains to be noticed, and that is, the introduction of several new chapters on "The Signs of

Delivery," "Impotence and Sterility," "Rape," and "The Signs and Duration of Pregnancy;" subjects which frequently form the subject of legal inquiry, and on which the accoucheur is not unfrequently called to give his opinion. These we consider a highly judicious addition, because they serve as points, or foci, to which much useful matter, scattered through the work, may be directed.

Thus far we have gone in the analysis of this work; and it must be evident, from the survey we have taken, that, although it was put forward as a new and improved edition of Dr. Blundell's lectures, it really has been enlarged to such an extent, and so thoroughly revised, as to entitle it to the rank of a new work. It might, indeed, be questioned how far these additions were advisable, and whether it would not have been better to give Dr. Blundell's own matter, unalloyed by any such additions. For our own part, we think not; because Dr. Blundell's matter is of too partial a character to admit, with propriety, of its publication under so general a title as that which is prefixed to the present volume; since, without intending to detract from the Doctor's acknowledged reputation, it cannot be denied that, while he has treated some subjects in the most admirable manner, he has merely glanced at others, perhaps, of equal importance. This is not peculiar to Dr. Blundell, who, in this respect, only partakes of the common failing which causes men to become proficient in one subject, while they neglect others. But, at the same time, it serves to point out the importance of the present and all similar works, where it is sought rather to give the collected opinions of the best authorities on that particular subject, than the special opinions of one particular individual. By such a course, the inequalities which some valuable works present are avoided, and a greater uniformity is preserved between the different portions of the same work.

Of the "getting up" of the book, we can only express our entire approval. Every possible care seems to have been taken in its preparation; a copious table of contents and index has been prepared, and the whole has been carefully elucidated by numerous explanatory notes.

Anleitung zur Uebung angehender Aerzte in Krankheits Beobachtung und Beurtheilung. Von FRIEDRICH NASSE, Director der medicinischen Klinik zu Bonn. Bonn, 1834.

Elementary Exercises for the Use of Young Physicians in Observing and Judging of Disease. By FREDERIC NASSE, Director of the Medical Clinic at Bonn. 8vo pp. 142.

AFTER some preliminary observations on the progressive steps by which the beginner should be led forward in the study of diagnosis, Dr. Nasse enters at great length into the details of those inquiries by which the physician judges of the state of his patient. The student is to investigate the normal state of structures and functions in himself and other healthy persons; besides which, the teacher is to demonstrate what is normal in the clinical patients, as well as what is abnormal. Thus, to take an example of our author's minute investigations, we are to consider *in the head*, "its general form, laterally and vertically; the superficies of the skull, with its smaller and larger elevations and depression, which differ, indeed, in different persons, without going beyond the limits of the normal; the facial angle of Camper; and the regions above the eyebrows, and at the root of the nose, with regard to the sound which may be remarked in them during respiration, by means of the stethoscope." For examining these and other small spots in the head, says Dr. Nasse, the instrument should be provided, at its removeable extremity, with a projecting cylinder only half an inch in diameter.

We are then to ascertain the effect produced upon the retina, by little or much light, by straining the sight, and by quick movements; to observe the features when the mind is tranquil, and when it is disquieted; to examine the sides of the face, with regard to the sound which is perceptible by means of the stethoscope, when placed upon the alveolar process of the upper jaw, or on the malar bone; the state of the teeth at different periods of life, particularly during childhood; as well as the appearance of the uvula, the velum pendulum palati, and the tonsils; the region of the mastoid process, with regard to the motion [sound?] which is perceptible in it by means of the stethoscope, during inspiration and loud speaking; the appearance of the membrana tympani

in the light; and lastly the quality of the saliva, of the mucus of the nose, and of the cerumen of the ear.

We are then taught to observe all that concerns the patient in his apartment and accommodations; and the remainder of the chapter is occupied by questions relating to the state of organs or excretions diseased, or supposed to be so.

The following passage is but a very small part of the inquiries which Dr. Nasse directs us to make concerning the abdomen:—

We are to observe, he says, whether the cavity of the abdomen, as viewed by the eye, or more accurately measured with a string above, in the middle, and below, is not abnormal in its whole circumference; whether it is unusually broad or narrow; whether it is not deficient in depth from before backwards, (in settling which points the eye must be assisted by laying both hands upon the hips, as well as upon the lower part of the anterior side of the abdomen, and upon the sacrum); whether the abdomen is irregularly prominent or flat, hard or soft, elastic or yielding, full or fallen in; whether it is not abnormally broad when the patient lies in a horizontal position; whether there are no single prominent or sunken spots in it; what is the form and extent of these projections and depressions; whether they disappear, increase, or change their situation during inspiration or expiration, coughing, or a change in the position of the abdomen; whether a finger can be pressed in upon the prominence; whether a margin can be felt surrounding it, and what is the hardness and tension of this margin; whether the prominence can be pushed away by the hand either laterally or inwardly; and if the latter, whether it cannot be made to disappear entirely; whether a depression is not to be felt in the place of the prominence which has disappeared; whether the prominence does not return; whether the integuments of the abdomen do not any where present those abnormal appearances, which have been mentioned in § 6, as occurring upon the skin; whether, when drawn up in folds, it is not too thin or too thick; whether inequalities are not to be felt under it; whether the movements of the abdomen in inspiration are not too strong or too weak, and unequal in rhythm, &c.—
Pp. 64, 65.

The second chapter instructs us as to

the inquiries to be made concerning the present and previous state of the patient, and the mode of combining the results of this inquiry with those previously obtained by observation alone. It is divided into six sections. The first contains general directions; the second, the method of inquiring into the present state of the patient; the third, the method of obtaining the history of the case; the fourth is an inquiry through intermediate persons; the fifth, on uniting the inquiry by observation with questions concerning the present state of the patient, and the history of his case; and the sixth suggests questions on the alterations that may have taken place in the state of the disease.

The third chapter treats of the method of enlarging or limiting our examination as circumstances may require. If we wish to take down a case for future reference, or to describe it completely for another person, the examination must comprehend all the details previously given. But it may be limited if we have only some special object in view, such as ascertaining if the person examined possesses some particular capability; or making out the diagnosis of a case which is to be medically treated, &c. On the other hand, there are cases where additional points must be inquired into; such are the cases of infants, pregnant or suckling women, the deranged, and those who are suspected of wishing to deceive the observer.

The fourth chapter treats of semeiotic exercises, and is divided into two sections; the first giving the requisites necessary for these exercises, and the second, the problems in the order in which they are to be proposed.

The fifth chapter treats of exercises in diagnosis; the sixth, of exercises in prognosis; the seventh and last chapter consists of precepts for drawing up the history of a case.

This work is extremely creditable to Dr. Nasse, both as a physician and a teacher; and it evidently shows that, not content with allowing his pupils to learn, he actively and zealously teaches them the most difficult of all arts. Our limits, as well as the nature of the book, have compelled us to indicate, rather than analyse, its contents; but we strongly recommend its perusal to those skilled in German, and think that a translation would be very useful to the medical community.

The Medical Jurisprudence of Insanity.

By J. M. PAGAN, M.D., Lecturer on Medical Jurisprudence, Member of the Faculty of Physicians and Surgeons of Glasgow, &c. &c. London and Glasgow, 1840. 12mo. pp. 327.

THIS work is divided into eight chapters; the subjects being unsoundness of mind, insanity, the causes of insanity, mania, monomania, dementia, idiocy, and the deaf and dumb.

Dr. Pagan has given a fair compendium of what is known on the subject of madness, at least of what is known to physicians, for he "has sought for his authorities and illustrations almost exclusively in the records of medicine, and has availed himself but little of those of the law." This is a fault, undoubtedly, in a book on medical jurisprudence; but it is one which the author will easily correct in a second edition. As it is, his book affords much useful information.

MEDICAL GAZETTE.

Friday, June 26, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in l'pauicum sit, dicendi periculum non recuso." CICERO.

THE VACCINATION BILL.

THERE are few things that testify less creditably of the majority of our legislators, than their comparative carelessness for the result of any question, however important to the public, which does not nearly interest their own political power. Let a measure be brought forward which will have a remote tendency to disfranchise a few hundreds of voters on either side, and every energy will be exerted that not a member may be absent from his seat, and all talent and industry will be employed, in public and in private, to carry or to reject the bill. But let another measure be introduced, in the result of which the lives and health of thousands are intimately concerned—on which may depend the propagation or the suppression of the direst scourge of the land—only let it be probable that the mortality will fall with an

equal weight upon the supporters of both political parties, and some sixty members will come lazily together, of whom fifty, at least, will take no part or interest in the discussion, but will calmly vote in whichever way they are requested by the one or two of each party who have made the bill their especial business.

Such has been the case with the bill for the extension of Vaccination, which has lately been virtually passed. The questions involved in it were, in fact, nothing less than whether the most important and beneficial discovery ever made in medical science should be permitted to have its full application; and whether the greatest pest that is indigenous in our land should be encouraged or nearly exterminated. Immediately before these questions came on, there were assembled ninety-five members, which number soon diminishing, presently began to oscillate between fifty and sixty, and of whom not more than six appear to have had any personal feeling upon the subject. What wonder, if that which even we must regard as of very minor importance, the interests of the medical profession, were totally overlooked, and if the only protest made against the infraction of a severe and evident injury upon its members, were disregarded!

It is but little credit to the legislature, as a body, that a measure which may be regarded as one of the greatest boons that has been for many years granted to the public, has been passed into a law. The great majority of those by whose votes it has been effected were altogether indifferent to, and probably unconscious of, the probable results to which it will lead—results so important to the credit and science of medicine, that, though by the same act he has been visited with no small amount of insult and injustice, there can scarcely be a member of our profession who will not,

in the prospect of them, easily forget for the time his own injury.

The bill plainly divides itself into two parts; one conferring benefit on the public; the other throwing a fresh insult upon the profession through the medium of their old enemies—the Poor Law Commissioners. The benefit to the public is, that every child may now, without cost, and almost without trouble, be subjected to the protective influence of vaccination, for the practice of which every facility and encouragement is afforded to parents; and that by the total suppression of inoculation, the artificial introduction of small-pox into a previously healthy neighbourhood, and its needless propagation in one already infected, are effectually prevented. We have heard and read a good deal of vapouring upon the subject from many of the non-professional correspondents of the daily newspapers, who seem to have entirely misunderstood the nature and probable effects of the measure about which they offer their opinions. Their notions would scarcely deserve refutation, if it were not that the attainment of the full benefit of the bill will depend, in a great degree, upon the manner in which it is received by the public; of whom “constant readers,” when they become occasional writers, constitute a very active and somewhat influential part. For this reason only we will briefly direct the attention of our professional brethren to some of the prejudices which they will have to subdue.

The heavy penalties levied upon the practitioners of inoculation are declaimed against as inroads upon the liberty of the subject. For the same reason they might cry out against the prohibition from selling poison to those who cannot render a good account of what it is their intention to do with it, or who cannot bring with them a witness to its purchase; a prohibition which it would be well to enforce, by punishing the incau-

tious vendor of poison as severely as the inoculator. But if these objectors admit with the rest of the world, that the sale of poison, if not punished with “present death,” should, at least, be placed under close restrictions, how much more strongly would they hold this right, if each dose of poison were a source not of individual injury only, but of a spreading pest! Yet such is the poison of inoculation. The matter of contagion conveyed by it into a healthy district is capable of infinite multiplication, and is not one whit less mischievous in all the neighbourhood than the severest epidemic originally generated there, or accidentally introduced. It is undoubted, that a single germ (shall we, in compliance with the theory of animate contagion, which every day’s researches render more probable, call it ovum or animalcule?) of small pox, is capable of multiplication to numbers which we may call infinite, whether itself were generated after accidental contact, or after inoculation. The drop of variolous poison inserted in the arm of one child, may, and often does, within a month, increase to a sufficient quantity of matter of contagion to produce small-pox in every individual of the population who is not protected by a previous attack, or by vaccination. Surely a conviction of the truth of this may be enough to authorize a little curtailment of the “liberty of the subject”; and to justify the threat of a month’s imprisonment being inflicted upon any one, high or low, unauthorized or diplomatized, who hereafter runs the risk of propagating small-pox by inoculation.

The inclusion of the authorized practitioner who would inoculate from any other motive than ignorance, with those who might be supposed to do so without any clear idea of the mischief they inflict, we regard as the most salutary of the amendments upon Sir Jas. Graham’s bill. There are few, we are sure, in our

profession, who would be induced by any motive or persuasion to adopt a practice so contrary to that which they know to be right, and these few may justly be treated as if they were not members of it; nay, considering the great evil which would result from an example in error being set by one whose station and pretensions might render him an object for imitation, we question whether the punishment upon a professional inoculator should not have been made to fall more heavily than upon one whose ignorance can more easily give way to his cupidity.

Another class of objectors argue for the danger of multiplied and indiscriminate vaccination among the poor, that no child can ever be deemed secure from having some fearful disorder ingrafted upon him with the cow-pox. Such need to be told that the children of the poor are not more liable—perhaps, indeed, not so liable—to scrofula and syphilis, and all the other constitutional diseases that they hold in such fear, than the rich are; and that nine-tenths of the material by which the children of the rich have been protected from small-pox, since the discovery of Jenner, have been supplied from the arms of those of the poor. It may be very consolatory to parents to be able to believe that a taint of scrofula has been implanted in their offspring from any other source than themselves; and especially it must be pleasing to a father to have even a distant notion that the indiscretions of some other man's celibacy than his own, have made his child so puny, and so liable to ill-looking disorders; but the plain truth is, that there is no proof whatever that with cow-pox any other disease can be communicated, while all facts and probabilities militate *in toto* against such an opinion.

If hearty efforts be now commenced and steadily continued, there is good reason to hope that in another century small-pox in this country

will be known only by the same historical notoriety as the plague and the sweating sickness; if its propagation by inoculation be rigidly prevented, we much doubt whether any self-originating epidemic (if it can occur in that form), or any accidentally introduced contagion, will ever be able to make head in a vaccinated population.

Such a glorious triumph has never yet been gained by medicine as we may fairly hope for, if vaccination can now be spread with all the energy and ardour that inspired the philanthropic mind of Jenner. But he was scarcely more obstructed and insulted in the early dawn of his discovery, by the ignorance and prejudice of the multitude, than his successors now are by the overweening desire for a monopoly of government, that is permitted, without restraint, to guide the triumvirate, to whom all that in the most distant manner concerns the welfare of the poor is entrusted. These gentlemen have again contrived to have the measures upon which they are to act so framed, that they may at least secure a reputation for that which, at any expense of good, is their main object—economy. They have made even the dispensation of the benefits of vaccination a matter of contract, and they seem to think that they have conferred a great privilege on the profession by permitting the competition to be open to all practitioners, as well as to the union surgeons. They have, unfortunately, been able to discover too plainly, that a medical practitioner thinks it better to work for nothing, or at a loss, than to let his opponent hold the whole practice among the poor of a district at even the smallest profit; that, in truth, practice among the poor is one, and to some the only apparent, way to practise among the rich; and that thus there is scarcely a union in England but some authorized practitioner may be found who

will take charge of all diseases in it, though he can look for no other recompense than the exclusion of his opponent from the small advantages that a higher contract could yield.

And just so will it be with vaccination: The Poor-Law Commissioners knew well enough that no medical man would willingly allow the whole of its practice to be monopolized by one, who would thus soon gain the reputation of being the only one competent to perform the operation, or on whom dependence could be placed for a ready supply of pure ichor;—they knew that no one would willingly run the risk of another being introduced, even in this unimportant capacity, among his patients, and they gladly seized this opportunity for another application of the *tender* system.

Still we hope even this will not prevent the full public benefit being obtained by this shamefully alloyed bill: the flagrant evils of the Poor-Law cannot much longer be allowed to insult and injure our profession, and we look anxiously, but with no despair, for the day when the whole burden of it will be thrown from our shoulders.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

PATHOLOGICAL DEPARTMENT.

June 16, 1840.

DR. CLENDINNING IN THE CHAIR.

[Continued from page 523.]

Disease of the Kidney.

MR. PHILLIPS exhibited a preparation of a kidney containing calculi within it, and related the particulars of the patient's symptoms during life. The man from whom the specimen was taken was thirty-four years of age. He had suffered for a considerable period from occasional pains in the region of the loins; but stated that the pain had latterly become more constant to one point, at the side of the lumbar vertebrae. It being thought that he suffered from disease of the kidney, the condition of the urine was frequently exa-

mined; but at no time was there any thing unhealthy or unusual observed in the urine. After the lapse of some time, a swelling arose in the back, where the pain was situated, and fluctuation was presently felt. From having found the urine, in all the examinations that were made of it, so healthy in its appearance, it was considered that this abscess was connected with a diseased condition of the bodies of the vertebrae. It was opened, and a small quantity of pus, which was thin and extremely fetid, was evacuated. No constitutional disturbance followed the opening of the abscess. The swelling, however, gradually increased, and extended eventually to such a degree, that the matter reached from the sacrum to the upper part of the scapula. The abscess was again opened, and a large quantity of offensively smelling pus was evacuated. During all this time the appearance of the urine was attentively noticed; but nothing was observed to indicate any disease in that organ; and the impression was retained that the patient had disease of the lumbar vertebrae.

Upon dissection, it was found, by laying open the abscess, and introducing a long probe into its deepest part, that the abscess communicated directly with the substance of the left kidney. The probe struck upon a calculus, which was lodged external to the kidney. Three other calculi were found impacted in the infundibula.

Mr. Phillips drew the attention of the society to the difficulty presented in this case of distinguishing between renal disease and lumbar abscess consequent upon caries of the bones of the spine; and was anxious to profit from the experience of any of the members, who might be able to point out by what means the difference could be ascertained, in cases of a similar nature to that which he had described.

Dr. Clendinning, and Mr. Gregory Smith, related, at some length, interesting cases in which abscesses had formed in the lumbar region, presenting many of the characters of lumbar abscess, but which were found to be connected with the presence of calculi in the kidney.

Mr. Arnott remarked that the connection of abscess in the loins with disease of the kidney, was not always easily or satisfactorily made out during life; and that when such connection did exist it was not always owing to the presence of calculus in the latter organ. He had been requested by Dr. Watson to see a patient of his, a female, in the Middlesex Hospital, who had had pain in the loins, and some indistinct symptoms of affection of the kidney, but nothing positive, and in whom a swelling had formed in the right loin.

There was tenderness, redness of integument, and deep-seated fluctuation here, with much constitutional disturbance. Mr. A. judged from its acuter symptoms, and more rapid progress, that the swelling was not connected with disease of the vertebræ, and opened it, giving issue to a quantity of pus. The aperture discharged for some time, and then healed. Swelling again took place, and this was opened, the pus being thinner and more offensive than before. But neither now nor afterwards, more than at first, could any trace of urine be discovered in the matter discharged from the loins, and no pus could be observed in the urine passed from the bladder. The patient dying worn out, a communication was found to exist between the abscess in the loin and kidney, on the outer surface of which last was an opening the size of a crow-quill leading into its interior. There was no calculus in the organ, but the ureter was contracted and obstructed.

Malignant tumors connected with bone.

Mr. Mayo proposed to shew to the meeting three preparations of malignant disease connected with bone, and to describe the symptoms which had accompanied the progress of each case.

CASE I.—The summer before last, Mr. Mayo proceeded—"I saw in consultation a gentleman about 40 years of age, pale and emaciated, looking like one in an advanced stage of consumption; bed-ridden from disease about his right hip. He stated that several months before, when getting into an omnibus, he felt something snap near his right hip, which caused him extreme pain. The pain continued, and for several weeks was very severe; then it gradually lessened, but he was left lame of that hip, any motion of which brought back pain. On examining the hip from the nates, it appeared broad and flattened, as in hip-joint disease, but with an undefined enlargement involving the joint and the trochanter; the leg was not shortened. On examining the hip in front, a considerable soft swelling could be felt that extended from Poupart's ligament four or five inches down the thigh. By pressure, which gave no pain, this could be repelled; but the moment the hand was taken away, the swelling reappeared. The surgeon, who was in regular attendance upon the patient, considered the swelling to be a rupture; to myself it appeared likely to be a chronic abscess, perhaps extending into the pelvis and connected with disease of the hip-joint. What gave this conjecture plausibility, was the simultaneous existence of a serous abscess on the right shoulder. The patient, notwithstanding every means were used to recruit his strength, grew daily weaker, and died in a

little more than a month. I examined the body, and found the tumor in the groin to be fungus hæmatodes of the neck of the femur. The head of the bone was excavated, the neck nearly wholly absorbed, a shell of the outer and back part alone being left, and that being disjoined from the head; the inner aspect likewise of the upper four inches of the shaft having disappeared: the space was occupied by medullary sarcoma, originating in the bone. The same had formed the tumor which had been felt in the groin.

CASE II.—George Barnes, aged 19, a farmer's labourer, was admitted three weeks ago into the Middlesex Hospital, with enlargement of the head of the right tibia. He stated that nine weeks before he had struck the inside of the knee against a ladder smartly, but not so severely as to make him lame the next day. In two or three weeks, however, the knee began to swell, and was a little stiff. In a fortnight more, it had further increased in size, and become painful; then he lay up, and the pain went away. On his admission, the head of the tibia, enlarged to twice its natural size, presented on the fore and inner part, two round swellings, which were soft and elastic: one was punctured with a grooved needle, when blood alone flowed. After remaining in the hospital eighteen days, the patient consented to amputation of the limb. During this period the swelling had increased considerably; there was a blush of inflammation on the skin at the front of the knee, and the veins of the leg were large and tumid. Pain, like that which he had experienced before he lay up, now returned; he described it as violent shooting pain, not continuous aching. It was relieved by leeches and fomenting.

The limb was examined shortly after the amputation on Friday last. Beneath the skin and fascia of the inner and upper part of the leg some effusion was found, partly serous, partly gelatinous and greenish. The swelling was found to be confined within a strong white fibrous capsule, which was continuous with the periosteum of the sound bone below.

On cutting this through with a scalpel, and making a section of the bone, the following appearances presented themselves:—The disease involved nearly the whole circumference of the head of the tibia; the interior of which was soft, and was sawn through easily, in consequence of the absorption of much of the proper osseous tissue, and the substitution of vascular texture, which was evidently of the same nature with the external tumors; the head of the bone was not enlarged; the mass of the tumor was external to the bone, being contained between it and the thick-

ened and expanded periosteum. The tumor, which projected in several rounded elevations, displayed in different parts different characters; at the lower part were two rounded portions of the size of walnuts that were filled with what resembled clotted blood, forming fungus hæmatodes; the mass of the tumor on the inside presented the familiar appearance of medullary sarcoma, or encephaloid tumor, looking like vascular cerebral matter; here and there of a darker colour, and lobulated. Round the upper part of the head of the tibia the tumor was firmer and whiter, here and there almost fibrous, but having generally the texture which Mr. Abernethy described under the name of mammary sarcoma. The disease appeared to have commenced between the periosteum and the bone, and to be progressing inwards, as well as developing itself outwards. At the back of either condyloid fossa, the last described growth pierced through the cartilage of the tibia; and one of the semilunar cartilages was at one part intensely vascular, and seemingly going into malignant disease.

CASE III.—A gentleman, about thirty years of age, fourteen months ago, had a tumor form upon the gum at the root of the left bicuspides of the lower jaw: a surgeon in the country cut it away, and applied caustic; the part healed, and continued well for some months. Early in the spring of this year the patient observed that the swelling had returned; it grew rapidly; and he came to London, and placed himself under my care. There was a firm vascular swelling on the alveolar part of the lower jaw, extending from the symphysis to the first molar tooth of the left side, and occupying both surfaces of the bone. I recommended him to submit to the removal of this portion of the jaw; Sir Benjamin Brodie gave him the same advice: the tumor was enlarging daily. I removed the portion of bone from which it grew, after taking out the right middle incisor and the left first molar tooth, by dividing the skin parallel to the base of the jaw, separating the integuments and flesh from the bone, and sawing the latter with a narrow saw introduced beneath the integuments, just clear of the tumor. The outer wound healed by adhesion, the mucous membrane within and subjacent tissue swelling, folded over the sawn surfaces of the bone; and on the eighth day from the operation the patient left town well. I saw him lately: there is little disfigurement; he articulates very perfectly, and masticates his food nearly as well as before.

The tumor is firm and white, and appears to be connected with the bone superficially only; growing from its surface, not out of its interior texture.

Congenital Malformation of the Bladder.

Dr. Boyd presented to the meeting a model in wax of a malformation of the urinary organs, in a boy 13 years of age, who has been an inmate of the Marylebone Infirmary for several years. The appearances were the same that have been described in many recorded cases. There was absence of a portion of the abdominal parietes, above the pubes; and the anterior wall of the urinary bladder was also deficient; so that the mucous lining of the posterior part of the bladder was exposed to view, exhibiting the orifices of both the ureters. At the lower part of this red vascular surface was a part corresponding with the penis, which appeared to consist merely of a tubercle formed by the corpora cavernosa, there being no structure resembling the spongy body, or any thing like the urethra, to be recognised in connexion with it. The scrotum was not developed; both the testes were found lodged in the inguinal canal, in the sacs of congenital herniæ. The urine could be seen constantly dribbling from the orifices of the ureters. The boy has always enjoyed good health.

Fatty Tumor lodged under the tongue, at the side of the frænum.

Mr. Arnott exhibited a tumor, composed of fatty substance, which he had recently removed from a part where it is not usual to find tumors of that description, namely, the root of the tongue, close to the frænum. Besides the specimen, he showed two drawings of the tumor, made by Mr. Lonsdale, before the operation. The tumor was of the size and shape of a walnut, only it was pointed at its most prominent part, not unlike the tip of the tongue. It was of a pale red colour, with smooth glistening surface, lodging under the tongue, between it and the gums. Being attached to the tongue it could be protruded between the teeth, or withdrawn into the mouth, at the will of the patient. It was soft and compressible, and communicated to the touch the feeling of its being a sac, with thick coats, partially filled with fluid. The patient, a farmer's labourer, 38 years of age, first observed it eight years ago, when it was about the size of a pea; and it had the same colour at that time which it now presents; that is, it was not blue, but of a light red colour. It was occasionally much larger at one time than at another; he frequently injured it by accidentally biting it when eating; it also made his speech indistinct, and he was desirous of having it removed.

Mr. Arnott acknowledged that when he proceeded to the operation, he was under the impression, judging from the situation of the tumor, that it was a ranula; the parietes of which had acquired greater

thickness than usual, from its long standing, and the repeated injuries, as well as the friction, to which it was subject. It was his intention to have removed it by the curved scissors, at its root, and then to have destroyed the remaining part of the sac by caustic. In commencing the operation, however, it soon became manifest what was the true nature of its structure, and he excised it with the knife. The patient recovered in a few days, and left the hospital.

The tumor, when cut into, consisted obviously of adipose tissue, like that in the common fatty tumor found in other parts of the body. It was observed, however, to be paler, or of a less pronounced yellow colour than belongs to the common fat. This difference in its appearance seemed to depend on a greater proportion of cellular membrane entering into its composition than what is generally observed. Mr. Arnott added, that the situation of the tumor was not one where such growths are usually met with by the surgeon; but he was aware that M. Dupuytren, in his *Leçons Orales*, and Mr. Liston, in his *Principles of Surgery*, had described and given representations of tumors consisting of fat in the same part.

Dr. Clendinning announced, before leaving the chair, that this was the last meeting for the present season of the Pathological department of the Society.

EMPHYSEMA OF THE SUBMUCOUS TISSUE OF THE STOMACH.

DR. HUTTON laid before the meeting a stomach, in the submucous tissue of which air had been secreted in large quantity, elevating the mucous membrane, and forming a congeries of transparent vesicles, situated towards the greater extremities of the stomach; the lining membrane of the organ was slightly inflamed, but nowhere softened; the œsophagus superficially ulcerated, and the duodenum preternaturally vascular; the liver was hypertrophied and the kidneys in a state of congestion. The cavities of the heart were empty, and the lining membranes of the great arterial trunks were tinged of a deep scarlet colour; the left cavity of the pleura and the lungs contained dark coloured fluid blood; the brain presented nothing abnormal, with the exception of slight effusion into the ventricles. The specimen was taken from the body of a man, æt. 36, who was admitted into the Richmond Hospital, labouring under the usual symptoms of delirium tremens, but not to an alarming amount. On the evening, however, of the day after his admission, he was attacked with violent delirium, followed by rigors, cold perspi-

rations, and convulsions, and died at twelve o'clock at night. Dr. Hutton alluded to the cases of pneumatosis of the intestinal mucous membrane, recorded by various authors and concluded, by drawing the attention of the Society to the connection that appeared to exist in such cases between the fluid state of the blood and the occurrence of emphysema in various tissues of the body. (Museum, Richmond Hospital.)—*Dublin Journal of Medical Science.*

RUPTURE OF THE RIGHT VENTRICLE OF THE HEART.

MR. SMITH exhibited the heart of a man, who for two years previous to his death had suffered from repeated attacks of rheumatism. He never complained of any affection of the heart until the night of the 11th November, when he was suddenly seized with symptoms of collapse, and anxiety about the præcordia; his pulse fell to forty in the minute, his extremities became cold, his countenance pale, and his whole body was bedewed with cold perspiration. He remained in this state for eighteen or nineteen hours, and died upon the 12th. Upon examination after death, the pericardium was found distended with blood, and a small lacerated opening was seen in the apex of the right ventricle, near the septum: the parietes of the ventricle became gradually thinner towards the seat of rupture; in other respects the heart was healthy. From a table drawn up by Dr. Townsend, it appeared that of twenty-five cases of rupture of the heart, in only three was the right ventricle the seat of the rupture; and of nineteen cases collected by Bayle, but three occupied the right ventricle. Mr. Smith remarked that the case he brought forward he considered interesting from its rarity, but it derived an additional interest from the circumstance that the symptoms would lead to the supposition that the rupture had taken place eighteen hours before death: life being prolonged under such circumstances could only, he conceived, be explained upon the supposition, that a coagulum had blocked up the opening in the right ventricle: he supposed that death at length took place when the coagulum was expelled, and concluded by alluding to the cases recorded by Cruveilhier and others, where a firm fibrinous concretion plugged up the fissure. (Museum, Richmond Hospital.)—*Ibid.*

DR. JOHN BADHAM.

(From a Correspondent.)

DIED at Nice, on the 11th May, aged 33, Dr. John Badham. With a mind full of activity, he had chiefly given himself up to

that profession which through a short but useful life he conscientiously and honourably exercised. Endowed with that real talent for observation which education cannot impart, he was prompt and courageous in emergencies, fertile in expedients to meet them, and regardless of personal ease in their application; to all of which, if there be added the advantages of a person that immediately pleased, and manners that immediately conciliated, it should seem difficult to combine qualities more fitted to conduct their possessor to early eminence and success. Yet was his career one of almost unmingled pain and trial: from 19 years of age he could not be said to have enjoyed a single week's exemption from sickness, or to have ever released his friends from an abiding sense of insecurity of a life which after a thousand reprieves, and after most severe and unusual suffering, was destined to terminate in his 33d year. The fatal disease (phthisis) to which at length he fell a victim, began to develop itself in its least equivocal signs fourteen years ago, at which period it consigned him, as apparently his only chance, to the solitude of a small West India Island, from which, after a few years' residence, and a fallacious truce, he, perhaps unfortunately, returned to settle in England. Soon after his arrival he was induced, through the recommendation of the late excellent Dr. Maton, to undertake the medical charge of the Duke of Newcastle's family and dependents at Clumber, and settled at the neighbouring town of Worksop; but, in the course of two or three winters, finding his complaints aggravated, and his intervals of comparative ease abridged, it became necessary to give up his post, and to place himself in a less inclement climate, and amidst duties at once more grateful and more easily performed. He was recommended to fix at Tours, where he again for a season became better; relapses, however, without number occurring, even in the mild climate of Touraine, and his sensations leading him constantly to desire more warmth, he went in 1838 to Rome, with a lady, since deceased. During last winter he again repaired to that city, in attendance on Lady Clare; but the present year had made but little progress when he found himself compelled, by increasing illness, to throw up all the engagements which were pressing fast upon him, from rapidly extending confidence in his abilities, and fall back upon Nice, where three final months of very aggravated distress, but amidst whatever alleviations the presence of his family could afford, conducted him to the grave, esteemed by all who had known him in his social, or consulted him in his professional capacity.

Several pages of useful and clear descriptive writing from his pen, on the diseases of the West Indies, have scarcely been overlooked by the readers of the *MEDICAL GAZETTE*; his extensive knowledge of the moral and social condition of the negro was exhibited in a series of Letters, without signature, published in the papers at a time when that subject was much agitated, with a view to legislative enactments. Such subjects as these were the relaxation of his leisure hours; and the whole turn of his habitual conversation was sufficient to show the lively interest he took in public affairs, and the possession of much more than ordinary insight into what was going on in the world in questions which affect the improvement and the happiness of mankind.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, June 11.

Samuel John Boulter, Oxford.—Watkin William Roberts, Carnarvon.—John Fuge, Bristol.—William Beet, Ashford, Kent.—Frederick Matthew Rayner, Uxbridge.—James Davenport Beadle, Bristol.—David Davies, Glamorganshire.—Edward Glover Bartlam, Broseley, Salop.

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, June 23, 1840.

Abscess . . .	1	Inflammation . .	15
Age and Debility .	22	Bowels & Stomach	1
Apoplexy . . .	4	Brain . . .	4
Asthma . . .	5	Lungs and Pleura	4
Childbirth . . .	1	Influenza . . .	2
Consumption . .	24	Liver, diseased .	3
Convulsions . .	4	Measles . . .	4
Croup . . .	3	Mortification .	5
Dentition . . .	7	Paralysis . . .	5
Dropsy . . .	8	Rheumatism . .	1
Dropsy in the Brain	5	Scrofula . . .	1
Epilepsy . . .	1	Small-pox . . .	4
Fever . . .	5	Stricture . . .	1
Fever, Scarlet .	3	Thrush . . .	4
Fever, Typhus .	5	Unknown Causes	113
Gout . . .	1		
Heart, diseased .	3	Casualties . . .	4
Hooping Cough .	10		

Increase of Burials, as compared with the preceding week . . . } 65

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N. Longitude 0° 3' 51" W. of Greenwich.

June.	Thermometer.	Barometer.
Wednesday 17	from 56 to 68	29.74 to 29.72
Thursday . 18	48 65	29.79 29.89
Friday . . 19	49 61	29.89 29.81
Saturday . 20	47 63	30.05 30.04
Sunday . . 21	51 72	30.11 29.93
Monday . . 22	53 70	29.78 29.72
Tuesday . . 23	49 68	29.68 29.63

Prevailing wind, S W.

Except the 19th, generally clear. Rain on the 17th, 19th, 22d, and following day.

Rain fallen, .495 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, JULY 3, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

—
DISEASES OF THE ARTICULATING SYSTEM, *continued.* DISLOCATIONS *considered generally*—Particular Dislocations. — The LOWER JAW—the OS HYOIDES—the PELVIS—the CLAVICLE—the HUMERUS. — *Their Nature and Treatment.*

DISLOCATION.

IN surgical language, the term dislocation is usually applied to that condition of a joint, in which, whether from accident or disease, a change of relation has occurred between the bones entering into its composition.

At present, we shall, however, restrict the term to those cases produced by external violence. Hereafter we shall consider those cases in which the displacement has been a consequence of disease, and also those which are termed congenital.

All moveable joints are subject to dislocation, but those are more especially exposed to it whose extent of motion is considerable, those placed at the extremity of a long lever, those whose surface of contact are least extended and whose form is most simple; those in which the concavity or cup is shallow, and whose ligaments are least numerous and least strong.

Dislocations are described as complete or incomplete; in the first, the articular surfaces have entirely ceased to correspond; in the second, there is still some contact between them, but they have acquired new relations.

For a long time it was thought that complete dislocation could only happen at orbicular joints, but that this is not strictly correct will be shown hereafter. In the ginglymoid articulations, on the contrary, incomplete dislocations are not frequent; and complete luxation of these joints cannot occur without destruction of the ligaments and some of the muscles which surround them.

Anatomists have been disposed to deny the possibility of certain luxations, which positive experience has yet shown to happen: thus Boyer denied the possibility of carpal dislocation, still it has been seen; others have denied the possibility of the luxation forwards of the forearm upon the arm, without fracture of the olecranon, yet this has happened; others, again, have maintained that the scapular extremity of the clavicle could not be displaced downwards under the acromion; this also has been witnessed. Indeed it is almost impossible to set limits to the consequence of external violence: I myself have known a complete dislocation backwards of the astragalus, so as to let the tibia and fibula rest on the calcis. I have known the atlas completely dislocated, without injury to the spinal cord.

Dislocations are commonly named according to the direction which is taken by the bone furthest removed from the trunk; thus five dislocations are described at the hip, according to the position of the head of the femur: upwards and outwards, in the iliac fossa; downwards and inwards, upon the foramen ovale; backwards, into the sciatic notch; forwards, upon the pelvis; downwards, upon the ischium. In the ginglymoid articulation we count four, which are described as anterior, posterior, internal, and external, according as the inferior bone is in either situation.

A luxated bone may, after its primitive displacement, change its position; this new displacement is termed consecutive:

thus when the humerus is luxated into the axilla, and afterwards is drawn between the scapula and subscapularis muscle, it undergoes a consecutive luxation.

No luxation from external causes can occur (unless there be some vice of conformation, or an accidental or congenital relaxation of the ligaments,) without more or less of distension, rupture, or injury to the ligaments, muscles, nerves, and vessels connected with the joint.

In all luxations of orbicular joints, the synovial and fibrous capsules are necessarily destroyed to admit of the escape of the head of the bone.

If no attempt at reduction be made, or if the attempt be unsuccessful, the cavity is gradually effaced, and a new cavity is by degrees hollowed out, upon, or within which, the head of the bone rests; around the luxated bone and the new cavity which receives it, the compressed cellular tissue takes a membranous form, and ends by constituting an articular capsule; internally, smooth like a synovial membrane; externally, cellulo-fibrous: the thickness and consistency of this capsule increases with age. Among these abnormal articulations, some allow of extensive motion: such are those where the humerus or femur is unreduced; others possess a very obscure movement: such are those observed in ginglymoid joints.

Dislocations are held to be simple when they are susceptible of immediate reduction, and the reduction is followed by prompt return to the natural condition of the part; complicated, when other particular lesions accompany the displacement: such are violent contusion, penetrating wounds, rupture of vessels, with external communication, the contusion or destruction of a nervous trunk, fracture of the luxated bone, or of that with which it articulates.

The greater number of luxations are seen in adults; in aged persons the bone itself commonly yields sooner than the ligaments: in children the epiphyses are separated, under the same causes which in a later period of life produce luxation.

Causes.—The causes of luxations are either predisposing or efficient. Among those which predispose to this accident, are laxity of ligaments, either congenital or acquired; as a consequence, for instance, of articular dropsy, feebleness of surrounding muscles, shallowness of the articular cavity, and the extent of motion at the part. The efficient causes are two-fold, external violence and muscular contraction.

The luxation of ginglymoid articulations is instantly produced by external violence, unless there be some malformation; that of orbicular articulations is almost always a consequence of the combined action of external violence and muscular

action. A single example will make this evident. The greater number of luxations at the shoulder occur as a consequence of falling forward. In this case there is an instinctive movement to protect the head and face; the arm is raised and carried forwards, so that the hand or the elbow shall come in contact with the ground. If at this moment the latissimus dorsi, the teres major and the pectoralis major, contract violently to sustain the trunk, they cannot displace the inferior extremity of the humerus, which rests on the ground fixed and immovable; the superior extremity will then yield, which it cannot do without destroying the capsule, and becoming luxated.

Symptoms.—The signs of luxation are either rational or sensible: the former are derived from the knowledge we may acquire of the situation of the body at the time of the injury, and the position of the limb; and the mode in which the injury has been applied, as well as the sensations experienced by the patient at the moment of the accident: e.g., we may presume that a person has suffered a luxation of the humerus into the axilla, when we find that he has fallen violently forward with the arms extended, and at the moment experiences a sensation of tearing or giving way in the axilla. The impossibility of executing certain movements which naturally are easy, the difficulty of moving the limb at all, are more certain signs; but these signs may be a consequence of severe contusion. In other cases, in ginglymoid joints, on the contrary, excessive mobility may be good evidence of luxation.

The sensible signs of luxation are derived from particular deformity at the part, from a change in the relation of apophyses, the lengthening or shortening of the limb.

It might be supposed that few diseases could be more easily detected than luxation; but it is not so. The local signs may be masked by tumefaction following the injury, and a dislocation may be taken for a contusion or a fracture.

As to a prognosis in cases of luxation when accidents occur, they are more frequently a consequence of concomitant lesions, than of the displacement of the bone and the rupture or the ligaments: luxations of orbicular have usually less formidable consequences than those of ginglymoid joints.

Whatever be the seat, a luxation is as much more easily reduced as it has been more recently occasioned; certain luxations, those of the thumb for instance, become irreducible in a few days. The ginglymoid become much sooner irreducible than the orbicular joints. In the shoulder, three months, in the hip, two, are periods beyond which we shall rarely succeed in

reducing a dislocation, except in a very feeble subject. Still no precise limits can be laid down: Cooper, Boyer, and others, have seen cases reduced at the end of three, four, and six months. Authentic cases are stated, where a much longer time had elapsed: ten, twelve, seventeen, and even twenty-four months, have elapsed without rendering reduction impracticable.

The *treatment* consists in replacing the dislocated bone, maintaining it there, and treating properly any complications. The reduction of a luxated bone should be proceeded in without delay, whenever there is no complication which would render delay prudent. The means employed in the business of reduction, are extension, counter-extension, and coaptation. The first is the effort exerted upon the inferior part of the luxated limb to disengage it from its new position: this power should be applied on a large surface, so as not to damage the integument; and it should be applied far enough from the joint to avoid irritating the muscles around it. Boyer believed it better to apply the power to a bone beyond that which is luxated. Sir A. Cooper and the ancients prefer applying extension to the bone itself. The degree of force to be employed should be proportioned to the resistance of the muscles. Thus, a luxation of the thigh would require more force for its reduction than a similar injury to the arm. Extension should be made, in the first place, in the direction which the bone has taken; but as the muscles yield, the person to whom the limb is confided should bring it towards its natural direction. *Counter-extension* is the resistance offered to extension, and, of course, it should be equal with it; it should be applied a little above the luxated joint, so as to maintain it fixed: it may be confided to an assistant, or it may be executed by fixing the bandage to a ring in the wall. Sir Astley Cooper believes that a great cause of failure in reduction depends upon the carelessness with which this is done. *Coaptation* results from the movements which the surgeon impresses upon the luxated bone for the purpose of replacing it, when extension has brought it to the level of its natural cavity. It is often useless in orbicular joints, because the muscles tend to replace the bone when it is brought to a proper level; but in ginglymoid joints it is always necessary.

The resistance of the muscles is the principal obstacle to surmount in the reduction of luxations, and extension is intended to vanquish it; but it may be eluded or lessened by other means. Petit advised that the limb should be placed in a state of semi-flexion, for the purpose of avoiding the powerful, elongated, and tense muscles. He insisted too strongly on the necessity for

this. My own opinion is, that, according to the case, complete flexion or extension is the best position. We easily reduce the dislocated patella during complete extension, by which we relax the rectus: luxations of the thigh yield often when we strongly flex the thigh upon the pelvis, and rotate the limb at the same time. A more important principle, much insisted on by Cooper and Dupuytren, is to divert the patient's attention from his situation, and thus for the moment interrupt muscular contraction. In a vigorous person, it is not prudent to insist upon violent attempts at reduction; they should be suspended, and other means employed to diminish muscular contractility. One thing, however, should not be lost sight of; a single person making the attempt directly after the accident, when the patient is alarmed, faint, or drunk, and muscular contractility is very inconsiderable, will often succeed in effecting reduction.

The means we usually employ to lessen muscular contractility are bleeding, warm-baths, tartar emetic, given at short intervals, and opium. Sir Astley Cooper strongly commends tartar emetic to lessen the power of robust individuals: he advises the exhibition of a grain every ten minutes. He states that, in this dose, it produces only nausea and prostration, without vomiting. My own experience certainly has shewn that vomiting usually supervenes. During the prostration so produced, the efforts at reduction are to be made. Boyer prefers opium for the purpose; but unless the contractions are a consequence of pain, this is not usually effective. Some persons have recommended spirituous liquors in quantity enough to produce intoxication, as a means of lessening muscular action. Abundant bleeding, from a large opening in a large vein, so as to produce speedy syncope, the warm-bath, and tartar emetic, are the means upon which reliance should be placed. Still, whatever means we employ to relax the muscular system, it will often be found that powerful and sustained efforts are necessary to effect reduction.

Many persons are opposed to the use of pullies, and, indeed, every species of machine: on the one hand, they urge the impossibility of estimating the power employed, and, consequently, the danger of rupture and inflammation; on the other, the impossibility of changing the direction without suspending the extension. Sir A. Cooper strongly recommends them in luxations of the thigh, and in old cases of those of the humerus. In France, their employment is, to a certain extent, resuscitated, since M. Sedillot has invented a "dynamometer" by which the force employed can be ascertained. When it is necessary to use

much and sustained force in reducing a dislocation, none of the reproaches to which I have alluded can fairly attach to the prudent use of pullies; by them, extension can be made under the most favourable circumstances; it may be made permanent and equable; it may be increased or lessened with great facility; there are no shocks, no oscillations, which must always happen when extension is confided to assistants. When extension is employed, it should be continued without interruption until the muscles yield. When pullies are employed, the bone returns into the cavity without noise or shock, because the muscles are so completely relaxed that they retain no more tenacity, and the surgeon is often not aware that the reduction is accomplished until the apparatus is relaxed.

When the luxation is reduced, the limb should be kept perfectly quiet, and placed in such a position that the muscles around the joint shall have no tendency to produce a new displacement. The time during which it is necessary to maintain absolute quiet at the part varies with the bone luxated, and the extent of injury. I believe the common practice of allowing the patient to use the limb at the end of a fortnight, or even three weeks, is unwise. When we consider, in fact, that no luxation can happen without destruction of the capsule, of muscles, of ligaments, and so on, it is evident that these injuries should be repaired before the limb is used. M. Malgaigne shews that forty days are necessary for the complete reparation of the injury done in luxation at the shoulder; sixty days for the hip; and this interval should be even longer in old dislocations. It is probable that the frequent recurrence of dislocation of the inferior maxilla and the patella is a consequence of the neglect of these precautions; the ligaments remain relaxed, and the displacement is reproduced with great facility.

In some cases, a luxated limb remains totally or partially paralyzed. This is gradually dissipated when it is a consequence of slight contusion of nerves; but it may be incurable when the nervous trunks have been greatly distended or contused.

Luxation of ginglymoid joints occasions now and then a good deal of tumefaction around the joint, and much embarrassment in motion. This is usually relieved by moderate movements carefully made; by embrocations, douches, or counter-irritation.

There are some complications, such as violent contusion of the soft parts around the joint, which make it prudent to defer all attempts at reduction. In many cases of penetrating wounds, however, it will be

proper at once to endeavour to reduce the displacement, if we hope to save the limb; but the edges of the wound should be brought together, cold should be applied, with bleeding and rigid diet: if, however, the joint be largely opened, and the articulating surfaces injured, amputation will most probably be necessary. The wound of an artery is a reason for postponement, unless the reduction can be very easily made. A fracture is usually a reason for a similar course. If, however, the luxation be very recent, and affect a hinge joint, it is generally easily reducible, and it should not be deferred. If, instead of that, the luxation should affect the shoulder or hip, the humerus or femur being fractured, we cannot usually reduce the dislocation; we must first attend to the fracture, and, when that is consolidated, we may sometimes succeed in reducing the dislocation.

LOWER JAW.

Luxation of the lower jaw is an accident which not unfrequently comes under our notice. For its occurrence, it is necessary that the branch of the inferior maxilla, by which the condyle is supported, should describe, with the base of the cranium, an angle, acute backwards and obtuse forwards. In the ordinary condition, it meets the base of the cranium at an opposite angle: the sinus of this angle varies with the different periods of life. In the child the obliquity is so great, that in the greatest removal of the jaw the angle never becomes right; and therefore the luxation in young children is held to be impossible. This condition is, to a certain extent, reproduced in persons of advanced age who have lost their teeth.

This bone can be luxated only in one direction; in any other it is anatomically impossible. This direction is forward, below, and in front, of the transverse root of the zygomatic arch. Most frequently, both condyles are luxated at the same time; in a few cases, one alone abandons the cavity, the other retains its proper place. Sir A. Cooper gives to the first the term complete, and to the second incomplete. Boyer attached to the first the term luxation of the lower jaw, and to the second luxation of the condyle — right or left, as the case might be. When we consider the circumstances as applicable to other joints, Boyer's designation seems best. Indeed the terms complete and incomplete, as applied to other joints, cannot, I think, be applied to the maxilla. It is hardly possible that the condyle should rest first upon the border of the glenoid cavity; it must either fall back into the cavity or be projected forward in front of it. It is, however, true that Sir A. Cooper admits an incomplete luxation,

characterized by the condyle passing under the transverse root of the zygoma. This kind of luxation is owing to the relaxation of the ligaments; the jaws are slightly separated, there is inability to shut the mouth, and slight pain at the luxated region. Usually, muscular efforts are enough for its reduction; yet Cooper has seen it persist for some time. As there was no dissection given, I confess my doubts of the nature of the case.

I know of no dissection of a recent luxation: if we produce the condition in a dead body, we find that the condyle passes below the transverse root of the zygoma, and rests immediately in front of it; the inter-articular cartilage remains applied upon the condyle; the portion of the capsule is partially destroyed; the external lateral ligament changes its direction.

Causes—It is desirable to study carefully the causes by which this accident is produced: the most frequent, unquestionably, is yawning. The ascending branch, in this act, is brought to form with the base of the cranium an acute angle, whose sinus is presented backwards; the condyle glides forward, carrying with it the cartilage, and resting on the transverse root of the zygoma. The external pterygoid muscle then becomes convulsively contracted, and the condyle is pushed forward. It is by a perfectly similar mechanism that dislocation takes place in the act of vomiting; it is probably still the same in some other sudden spasmodic contractions of the muscles, when the mouth is open. The accident occurred to a lady in the hands of Mr. Fox, while extracting a tooth. It has been observed also in a maniac, during the efforts necessary to get food into his mouth. It may result from direct violence—a blow with the fist upon the chin, the mouth being open, or by a fall upon the same part. Luxation of one side is produced by the same mechanism as when the accident occurs on both.

Symptoms.—In this dislocation the mouth is more or less open, the chin depressed, the cheeks flattened, by the elongation of the masseter temporal and buccinator muscles. Below the malar projection, or within the mouth, is a projection formed by the coronoid apophysis; the inferior dental arch projects beyond the superior; the open mouth allows of the flow of saliva involuntarily, and articulation is difficult. In front of the meatus auditorius a depression is found, corresponding to the place occupied by the condyle. To these signs, common to the displacement of one or both condyles, may be added certain symptoms which are peculiar to the first: thus, when one side is luxated, the chin and the inferior dental arch

are sensibly directed to the opposite side; the finger placed in front of the meatus auditorius, only distinguishes a void on one side, and the muscular tension is not marked except on that side. After a short time, in cases of luxation of the inferior jaw, the condyles find their way into the zygomatic fossa: the jaw is a little raised; the lips are so far approximated as to prevent the escape of saliva; deglutition, at first impossible, may be accomplished; the patient is able to speak, but with difficulty; and, after some time, mastication can be performed.

Treatment.—The treatment is evident—to reduce the luxation and to prevent a new displacement, which is always to be apprehended. The reduction may be effected by placing the patient sitting before you, his head resting upon the breast of an assistant. The thumbs of the operator are then to be padded, and introduced into the patient's mouth, so as to rest on the last molar teeth in the luxated jaw; with the other fingers he grasps the body of the maxilla. Pressure is now made downwards by means of the thumbs, until the condyles are carried downwards and backwards, the chin being at the same time directed upwards and forwards. At this time the condyles being disengaged, the muscles acting upon the jaw being spasmodically contracted, the reduction is suddenly accomplished, and with a loud snap; and at that moment, if the thumbs were not well protected, the operator would be severely bitten: at all events, it is wise, even then, to slip the thumbs between the cheeks and the teeth. Sir A. Cooper describes another method. The handle of a common fork is introduced behind the last molar teeth on each side. While an assistant maintains them there, the operator places himself behind the patient, and forcibly drags the inferior towards the superior maxilla, until reduction is accomplished. This method presents, at all events, one recommendation—the operator's thumbs run no risk. Beyond a month to six weeks, it is commonly apprehended that this luxation is irreducible; and even before that, it may be necessary to employ other means than those we have described. Stromeyer invented a rather complex instrument, of considerable power, for this purpose; it is described in Rust's Magazine, vol. 39, part 2, page 219. He employed it in the case of a young woman, aged 23, whose jaw had been luxated thirty-five days, by yawning. The reduction was accomplished in half an hour, and, in consequence of the relaxation of the muscles, there was no noise. Junk invented another instrument (see Rust, vol. 39, part 2, page 222), but his instrument is certainly inferior to that of

Stromeyer: but as accidents may find us without such instruments, we may recur to a method recommended by Professor Asti (*Archiv. Gen. de Med.* t. v. p. 144). He treated a woman in whom it supervened during convulsions occurring in labour, a month after the accident happened. With the hands alone, reduction was found to be impossible. He used two pincers, the blades of which were padded, and the handles long; the blades, closed, were introduced on each side between the last molar teeth; the blades were forcibly separated, the chin maintained, and reduction effected. To maintain reduction, the chin should be supported by a bandage, and the patient fed upon liquids, as it is always probable that a slight movement may cause a new displacement. As a consequence of this accident, the masseter muscles remain sometimes painful or paralysed; this is owing to the distension or other injury of the masseteric nerves which pass in front of the neck of the condyles.

OS HYOIDES.

Luxation of this bone is, in many works on surgery, an undescribed disease. Valsalva (*De Aure Humana*, c. 2, Number 20,) has first observed and described this condition, but the few particulars of the case which he has given would warrant us in doubting whether it were really luxation of the hyoides. This displacement is more probable in two cases described by Molinelli; in one a young student was seized by the throat by a man much stronger than himself; at the moment he disengaged himself from the grasp he tried to swallow, but neither fluids nor solids would pass. Molinelli saw him in an hour—his anxiety was extreme, a cold sweat covered his body, the pulse was small, and his death seemed near; still the voice, speech, and respiration, were unchanged, neither was any deformity apparent in the region of the larynx, but between this organ and the mastoid muscle a tumor existed, the slightest pressure upon which caused very acute pain. He passed his finger down, between the right tonsil and the base of the tongue; at the same time he applied two fingers on the right side of the neck, in the situation of the horn of the hyoides: pressure was made from within outwards: the patient was much relieved, and could swallow a little water: this manœuvre was repeated a second and a third time, when the relief was complete: the second case was a consequence of a blow. Mugna (*Annali universali di Medicina*, Nov. and Dec. 1828.) described a case in which it seemed to be produced by an effort made to swallow a piece of cartilage; the symptoms were similar, so was the mode of relief, to Molinelli's case. It is difficult to admit that it could succeed to

the act of deglutition, still it is maintained by Valsalva, and his opinion is adopted by Morgagni (*de Sed. Ep.* 28. Sect 14,) and by many other succeeding authors. Certainly in Mugna's case there does not seem to have been a projection such as existed in Molinelli's. The subject, however, requires new opportunities for careful investigation.

LUXATIONS OF THE BONES OF THE PELVIS.

The mode and the extent of the articulations of these bones, the number and power of their ligaments, ought to render these displacements rare and incomplete. Very rarely indeed is a case presented in such a state of simplicity as would justify us in considering the luxation as the principal injury; in fact, to produce it, a prodigious force is necessary, a fall from a great height upon the legs, or a heavy weight falling upon the shoulders or upon the pelvis: in these cases, not only one, but many surfaces suffer; there is great contusion of the soft parts, and probably fatal injury of some organ contained within the pelvis.

Whether the sacrum be driven in, or one or both of the iliac bones be jammed in, the sacrum retaining its proper place, the ligaments of the sacro-iliac symphysis, or those of the pelvis, must be ruptured; from whence it happens, that there is much in common in the symptoms. There is severe pain over the articulation, whose ligaments are ruptured; this pain, upon the slightest movement, becomes intolerable. In all cases the luxated bone is so moveable that it is alternately raised and depressed, as the thigh of the corresponding side is flexed or extended. The injury to the soft parts having been great, there is much subsequent external and internal mischief; the legs, the rectum, and the bladder, are either very painful, or insensible, or paralysed: whether the case be one of displacement of the sacrum, or that of the iliac bones, the symptoms are very similar, and the tumefaction of the soft parts is usually so great as to mask displacement; and as the symphysis pubis usually continues intact, the mobility of the ossa innominata causes us to suspect luxation. When only one iliac bone is luxated, the injury is very easily detected; in that case, if the bone be forced upwards, there is rupture of the sacro-iliac and pubic symphyses. The iliac spine of the injured side no longer corresponds to the other, but is raised, and with it the limb of the affected side.

All these injuries are most serious, from the great injuries to the soft parts; the consequences are almost always a long exhausting suppuration, and often paralysis also, as a consequence of the profound injuries which the sacral plexus usually

sustains: still some cases of cure are on record, but they are few. In the memoirs of the Dijon Academy is a case of such a luxation, unattended by very serious symptoms: it was seen by Eneau, Hoin, and Chausssier; the patient fell from a great height; the attempts at reduction which were made, were accompanied by great pain, and were therefore suspended. When he moved about on crutches, the weight of the limb ultimately reduced it, and he resumed his ordinary occupations. If the sacrum be depressed, reduction is impossible, but the iliac bones may be acted upon without much difficulty, by fixing the pelvis, and making extension with the thigh; but there is much difference of opinion, whether it can be prudently attempted, and the Dijon case favours the opinion that it cannot. Some persons maintain that reduction should always be attempted, and accomplished if it be easy, and that it should not be persisted in if found difficult. This is all very well, but where does the difficulty begin? There is always pain upon the slightest motion at the part; how shall we set bounds to it? Certainly the results of the Dijon case shew the happy results which followed the use of crutches: the reproduction of pain when reduction was attempted, seems to indicate that we should abstain from violence, and limit ourselves to the energetic employment of antiphlogistics when necessary.

RELAXATION OF THE PELVIC SYMPHYSES.

A species of luxation may occur at these symphyses during parturition; the relaxation is usually not great, but cases are recorded by Bianchi, Morgagni, Hunter, and others, where the bones moved on each other to the extent of an inch. It may occur at an earlier period of pregnancy: Bertin has seen it in the fourth month, Desormeaux in the fifth. Bassius speaks of a student of law, who, in fencing, produced this condition. In the Philosophical Transactions is a case in which the pubal bones at the symphysis were removed to the extent of four inches; it had succeeded to a leap on horseback. In the memoir of Louis is a case communicated to him by Philippe, where a man, while resting his arm on the back of a chair and leaning forward, received on the small of the back a sack of wheat weighing more than 300 pounds, which slipped from the grasp of another man: at first there was numbness, then pain, succeeded by accidents which destroyed his life in three weeks: in this case the pubal symphysis was disjoined.

When the bones are disjoined or the symphyses relaxed at the period of parturition, the woman experiences pain in these various regions; this pain is scarcely per-

ceived when she rests quietly in the horizontal position, but motion produces it; if she attempts to walk she is sensible that the sacrum moves between the iliac bones; progression becomes more difficult and painful, and at last impossible without support; at this time, if the hand be placed over a symphysis, while the patient is attempting to walk, the mobility is readily discovered.

In women consolidation of the symphyses may occur; Smellie has seen it after six months, Baudelocque after nine months. Denman attended a patient who for eight years was unable to walk without crutches; but the symphysis may continue disunited through life. Mr. Cline shewed Denman a case where false joints were formed at the symphyses. Suppuration may follow, and destruction of the part or even of life may be the consequence. In whatever mode it may have been produced, complete rest of the pelvis is the first point to be attended to: good has been derived from salt water douches directed upon the parts: when we have no further reason to apprehend inflammatory complications, a kind of girdle or truss is employed by some persons to surround the pelvis, for the purpose of guarding against the motion of one bone on another. If any symptoms of inflammation are developed, active antiphlogistic treatment must be at once employed.

LUXATION OF THE RIBS AND THEIR CARTILAGES.

Buttet advanced the opinion that a shock directed against the posterior extremity of a rib, or a corresponding transverse process, may cause a direct luxation of that extremity; he also supposed that it may be detected by an acute pain at the articulation, increased at each inspiration, by the mobility of the rib in its whole length, and by a crepitation sensible to the touch; but in the present day we think that luxation of the posterior extremity of a rib is impossible, and that if it could exist, the signs furnished by Buttet would be insufficient to recognise it. The case brought forward by him was no doubt a fracture.

The structure of the ribs, the flexibility of their cartilages, the solidity of their sternal and vertebral articulations, the number and thickness of the muscles which cover the latter articulation, as well as the facility with which they are fractured, fully explain the absence of facts of costal luxation; it is, therefore, astonishing that Juncker and Heister should have described different species of a luxation which seems almost impossible, and taught several modes of reduction.

Luxation of the costal cartilages has really occurred, but it is very rare; it has only been observed to affect those of the sixth, seventh, eighth, and ninth ribs. For

it to happen it is necessary that the trunk be strongly extended backwards: at this time one of the cartilages we have mentioned may glide below and behind the cartilage immediately above it, and push it forward so as to cause it to project. In this displacement the contraction of the abdominal muscles necessarily plays a part, and there is rupture of the ligamentary fibres of the two corresponding cartilages.

At the moment of the accident an acute pain is felt at the point where the projection exists; there is difficulty of respiration, and sometimes a spasm of the thoracic muscles. It is believed that if left to itself the displacement would be gradually reduced, during some excited acts of respiration; at all events, that the pain and spasmodic action would cease; but it is a wiser course to seek to reduce it at once. To reduce it, pressure from below, upwards, is made on the projecting cartilage: by this means the cartilage which is behind may, by its own elasticity, disengage itself and resume its proper place. A roller and quiet complete the cure.

CLAVICLE.

From its situation the clavicle is particularly exposed to fracture and luxation. A case is described by Portal, and I know of two others, where there was a double luxation, that is, both extremities were displaced; the external upwards, the internal forwards. In Portal's case the patient was a carpenter, who fell from a third story upon the pavement.

Luxation of the *sternal* extremity of the clavicle is a very unfrequent accident. To admit a luxation *upwards*, we must admit that the shoulder may be depressed so far as to allow the middle of the clavicle to rest on the first rib, as a point of support, this bone thus becoming a lever of the first kind, the sternal being raised while the external extremity is depressed: now such a movement is in my opinion impossible. The *downward* luxation is prevented by the cartilage of the first rib; therefore the luxations we admit are the *anterior* and *posterior*, and by many persons the latter is denied, because the resistance of the costo-clavicular ligaments, that of the trapezius and rhomboid muscles, whose contraction would be opposed to a movement of the shoulder forward, sufficiently extensive to admit of it, would constitute an almost insurmountable obstacle. Boyer doubted whether it could occur without violence directly applied to the internal extremity of the bone. Sir A. Cooper, although he never saw a luxation backwards, from concussion, thinks it possible; but the only luxation backwards which he has seen was the consequence of a particular deformity of the spine. Pellieux's case is conclusive

as to the possibility of the accident; a horse fell upon his rider, and it was suddenly produced.

The luxation forwards, then, is almost the only one which has been observed; and when we regard the organization of that articulation we cannot be surprised that the accident does not oftener occur. It happens from falls upon the shoulder, which carry it inwards and backwards. It has been produced by putting the knee between the shoulders, and forcibly dragging them backwards. Desault describes a case where a porter was carrying on his back a heavy burthen, which was supported there by slings passed around the axillæ: wishing to rest his burden on a stone, he missed it, and the arms were dragged backwards.

Symptoms.—There is usually no difficulty in detecting the injury, the kind of accident, the pain instantly supervening at the sterno-clavicular articulation, the shoulder easily depressed, and placed nearer to the thoracic parietes, a tumor in front of the sternum, moving with the clavicle, but disappearing if the shoulder be carried outwards, are signs sufficiently conclusive of the accident. In spare persons these signs are very evident, but in fat persons there is occasionally some obscurity, especially if luxation be incomplete. Now such a tumor as we have described has been mistaken for exostosis: but there must have been gross inattention. An aneurismal tumor of the innominata has been known to luxate the clavicle forwards (Laugier).

The luxation backwards by violence inflicted at the point, destroys the capsular and costo-clavicular ligaments, and the bone would glide behind the sternum; there would be depression of the shoulder, obliquity of the clavicle, and a depression corresponding to the sterno-clavicular articulation; but then there would be pressure upon the jugular and subclavian veins, and, as in the case of Sir A. Cooper, pressure and pushing aside of the trachea, and pressure upon the œsophagus. A distortion of the spine, by which the shoulder was brought forward, made such progress that the clavicle was gradually luxated backwards, the œsophagus was so compressed, deglutition so interfered with, that the patient was marasmic. Mr. Davie, of Bungay, saved the patient by excising the internal extremity of the clavicle.

Treatment.—Compared to the luxation backwards, the luxation forwards is an unimportant disease. To reduce the forward luxation, the corresponding shoulder must first be borne outwards, then backwards, so as to disengage the extremity of the clavicle; then forwards, to replace it in its proper position. The mode of accomplishing this object is as follows:—the

patient sits on a chair or bed; the surgeon places himself on the injured side, places one hand on the upper and inner part of the arm, with the other he grasps the elbow, makes of the humerus a lever of the first kind, of which the point of support is the hand in the axilla. If the luxation be backwards, the shoulder should be borne outwards and forwards, then outwards and backwards. In these luxations the difficulty is not to reduce the bone, but to maintain it when reduced. A cushion should be placed in the axilla; the arm should be fixed to the side of the chest, and sustained there. When the luxation is forwards, pressure must be made at the point, by means of starch or other bandages, by which a sort of papier maché is formed, which is better calculated to maintain reduction than any other agent I know.

The scapular extremity of the clavicle may be luxated, but it is an accident of rare occurrence, because the scapula and clavicle move together; the accident, therefore, can only happen when the scapula is fixed, and the clavicle moved by muscular action. From its anatomical disposition, from its strong ligamentary attachments with the acromion and coracoid apophyses, from the support it obtains from the latter process, displacement might be expected to be unfrequent. Those arrangements would indispose me to admit, with Petit, that the downward should be more frequent than the upward luxation—indeed, I agree with Boyer, that the downward luxation is almost impossible: certainly there is no undoubted instance, that I know, of its occurrence, except that referred to by Malgaigne, where he says the possibility was proved by dissection, sixty years ago, and that of Tournel, in the military hospital at Cambrai. The upward luxation was occasionally observed, even in the time of Hippocrates; and Galen himself seems to have been the subject of it during some gymnastic efforts. It usually happens from a fall upon the shoulder, the scapula being fixed to the ground by the weight of the body, while the clavicle is dragged upwards by the violent contraction of the clavicular portion of the trapezius. The luxation may be complete or incomplete. J. L. Petit has seen the clavicle scarcely losing its connexion with the acromion. In the case of Galen there was a separation to the extent of three fingers' breadth; but no similar displacement seems to have occurred in the cases which have been since observed.

Symptoms.—We detect this accident by the circumstances of the fall, the pain felt and increased by moving the arm, especially raising; the manifest projection

apparent to the eye; the obstacle met by the finger in passing along the spine of the scapula towards the acromion; and the depressed shoulder, evidently brought nearer to the sternum.

Diagnosis.—No doubt, however, can be entertained that this accident has been confounded with fracture of the acromial end of the bone; but the seat of pain, the absence of crepitation, should prevent this. It has been mistaken for luxation of the humerus; the projecting clavicle has then been confounded with the acromion; but then the absence of the head of the humerus in the axilla should prevent this. Galen was the victim of this mistake. Again, it may be confounded with fracture of the acromion; but then we shall find it moveable, and separated by the contraction of the deltoid, while the clavicle will be found in its proper place if we pass the finger from the spine of the scapula over it.

Treatment.—If left to itself the pain soon ceases, and the ligaments keep it from moving far. It is easily reduced; we use the humerus as a lever of the first kind, by means of which we carry the shoulder outwards, then we carry it upwards, while we make pressure upon the humeral extremity of the clavicle; but the difficulty of maintaining reduction is as great as that which attends the sternal luxation. A pillow should be placed in the axilla, and the elbow should be fixed to the side, and strongly pressed upwards, so as to bring the acromion as near as may be to the displaced clavicle. Starch bandage should be moulded on the part, so as to maintain the two bones in their proper connection. Whatever means be employed, it is rarely that we obtain a consolidation without deformity; but no great inconvenience is ordinarily experienced by the patient.

HUMERUS.

Probably luxations of the head of the humerus are more numerous than all others put together: this is explained by the mechanism of the joint, and the extent of motion. Much as has been done on the subject of luxation of the humerus, there is still left very much to be accomplished. Hippocrates admitted four species of luxation of the shoulder, which were distinguished as inferior, superior, anterior, and external; but, strange to say, he only observed one, the luxation downwards: this classification was adopted by Galen and Paré; the latter modified it by maintaining the luxation inwards to be the most frequent, the luxation downwards the rarest. Duverney believed the downward luxation to be the only primitive

one. Desault returned somewhat to the ideas of the ancients, and described, as the only primitive luxations, the downwards, the inwards, and the outwards, holding the upward one to be consecutive. Boyer held the directly upward luxation to be impossible, in consequence of the obstacle presented by the acromion and coracoid process, and their connecting ligaments.

Petit, Boyer, and Sir A. Cooper, have described an incomplete luxation, in which the head of the humerus has not totally abandoned the glenoid cavity; indeed Cooper does not regard it as a rare accident, neither does Brodie, and a certain number of cases seem to warrant this opinion.

Before proceeding farther, we must say a few words upon the anatomical arrangements of this joint. The head of the humerus is hemispherical; its extent, perpendicularly, is double: transversely it is treble, that of the glenoid cavity; therefore it cannot be received into it as the head of the femur is into the acetabulum. From this disproportion, and the laxity of the capsular ligament, it results that the arm enjoys great extent of motion; but rolling as the head does, on an almost plane surface, it is displaced with comparative facility. If we judged of the relative facility of displacements by the form of the glenoid cavity, we might think, that as it is narrower in its superior third, in this direction the head of the bone would most easily pass; but the acromion and coracoid processes and their ligaments, the resistance offered by the subscapularis, forwards and inwards; the supra-spinatus, upwards; the infra-spinatus and teres minor, outwards or backwards; and the deltoid, above, are so many obstacles to the upward movement. The mobility of the scapula, which accompanies the humerus in most of its movements, is another obstacle to displacement; but as soon as the scapula is fixed, and the arm moves alone, this difficulty is lessened; and, as in all extended movements of the arm the scapula is fixed, we cannot be surprised that luxation is frequent. It is towards the inferior part of the joint, in the inferior half of the glenoid cavity, that displacements oftenest occur. In this direction the capsule is thinner and larger than at other points; no muscle is opposed to the motion of the head of the humerus, except the triceps, whose long head renders very rare what was called luxation downwards.

There are two directions in which the head of the humerus ordinarily escapes, forwards, towards the axilla, backwards, towards the infra spinatus fossa. The

first is incomparably the most frequent; it is what is termed downwards and inwards. A long hospital practice may never give you an opportunity to see a dislocation backwards into the infra-spinatus fossa. It has been said that directly upward and directly downward luxation is impossible; it should, however, be added, that the acromio-coracoid roof may give way, and the head of the humerus may then pass upwards; that the tendon of the triceps may be destroyed, and the head of the bone may pass directly downwards. These things are not absolutely impossible, for nothing is impossible in the way of displacement, but these are very rare exceptions, which cannot serve as the bases of a division. I think it unwise to multiply distinctions dependent upon the accidental position of the head of the bone. Larrey mentioned having seen, in Prochaska's museum, at Vienna, a specimen, where the head of the humerus rested between two ribs, having destroyed the intercostal muscles; forthwith an intercostal variety was instituted. In a case mentioned by Percy, the humerus passed through the chest: this would be a thoracic variety. I mention these things to show how ridiculous these distinctions appear.

Of the forward luxations it is well to make three divisions:—*sub-pectoral*, when the head of the humerus is in the axilla, between the subscapular and pectoral muscles; *sub-scapular*, when the head is lodged in the axillary fossa of the scapula, and separated from the axilla by the sub-scapular muscle; and *sub clavicular*, when the head of the bone is found near the root of the coracoid process. Of the backward luxations there are two varieties: the head may be removed more or less from the acromion process towards the infra-spinatus fossa, so that we may get *sub-acromial* or *sub spinatal*.

It rarely happens that there is dislocation on both sides of the body at the same time. Sanson mentions a case of a porter who rested both hands on the hinder part of a cart while he inclined his back to receive a sack of corn; the sack suddenly fell upon the upper part of his back, which gave way with the load, the arms being fixed: there was forward dislocation of both humeri.

Sir A. Cooper thinks the most frequent cause of *forward* luxation to be direct—that is to say, a fall in which the shoulder comes against an unequal surface, the head of the humerus being pushed when the muscles are unprepared to resist. Other authors maintain that the most frequent cause is an indirect one—a fall on

the hand or the elbow. It is brought about as follows:—The arm is removed from the trunk; the elbow or the hand comes in contact with the soil, and is the fixed point; the head of the humerus becomes the moveable point, and the power which accomplishes the luxation is represented by the *latissimus dorsi* and *pectoralis major*. In many cases the following is the correct explanation:—The arm strongly raised, represents a lever of the first kind; the surgical neck of the humerus takes as a support, the acromion; the power is towards the hand or the elbow, and the resistance on the inner side of the joint, between the coracoid process and the tendon of the triceps; the capsule gives way, and the bone escapes. It is not always a fall which produces this luxation—it is not always a violent convulsion: there are cases where the cause is slight; then the recurrence may be frequent. In most hospitals there are well-known faces of persons who apply to have dislocations reduced. Sir A. Cooper describes the case of a man who luxated his arm in bed; and this had occurred several times, even from rubbing his eyes or scratching himself. I should think that, in such cases, the displacement must be favoured by some change in the constituents of the joint. The general characters of a luxation forward are as follow:—The shoulder has lost its roundness, because the head of the humerus no longer supports the deltoid, and, if the hand be placed upon it, it distinguishes a hollow. There is a projection of the acromion; the head of the humerus forms a round tumor in the axilla; the elbow is removed from the side; the forearm is flexed; the arm is longer—that is to say, the space which exists between the external angle of the acromion and the external condyle of the luxated humerus is greater than in the natural state of the arm. The head of the patient inclines towards the injured side, and the luxated arm is supported by the other: this lessens the pain, which is transferred into numbness, extending to the fingers. Voluntary movement of the arm is impossible; if it be moved it is painful, difficult, and very limited, especially when an attempt is made to bring it to the side: to remove it from the side, or to carry it backwards or forwards, is less painful.

ON THE
TREATMENT OF FISTULA IN ANO,
WITH SOME REMARKS ON THE OPERATION
OF M. ROUX, IN THE HÔTEL-DIEU, PARIS.

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THE present paper claims not to offer any thing that is new, in the treatment of this very frequent disease. After the number of works that have appeared from the earliest times to the present day; after the talents of so many surgeons have been devoted to the task; and after the able remarks of Sir B. C. Brodie, in the *MEDICAL GAZETTE* (vol. for 1835-36) much additional information could scarcely be expected; and yet, some epitomized account of the treatment advocated, with some remarks on the plan, found to be most successful by the author, in numerous cases, may not, perhaps, be useless to the student, or uninteresting to his professional brethren. My attention was more particularly directed to this disease when in Paris, both from the great number of cases that came under my notice, and the difference in the mode of performing the operation; for no English surgeon, entering the Hôtel-Dieu for the first time, can fail to draw a comparison between the operation there performed, and that he has constantly been in the habit of seeing in his own country. I have just remarked, that the number of cases admitted for operation, into the wards under the care of M. Roux, appeared to be very great; but I could not learn whether this arose from the complaint being more frequent in Paris than in London, or from the celebrity this splendid operator has obtained, inducing all who possibly could to place themselves under his care; for during my sojourn there he certainly had more cases of fistula than any other of the surgeons. I know of nothing in the diet, or mode of life, of our continental neighbours, more likely to produce this malady than in England. This, however, leads us to consider,

I. *The causes of Fistula in Ano.*

We have long been too apt to call every formation of pus, situate near this

part, a fistula, and this wrong appellation has, not very unfrequently, given rise to a plan of treatment certainly not calculated to produce the desired effect. Our ancestors supposed any small opening, leading from a large and deep cavity, containing matter, to be a fistulous opening; and with this term they also couple an idea of induration, and supposing this hardness to be a cause, and not an effect of the disease, and having no idea that it could be removed, not supposing that when the cause was removed, this hardness, as a matter of course, would disappear also; and supposing the proper treatment to consist in the removal of such callosity, they vigorously attacked it, with the view of either at once removing it with a cutting instrument, or destroying it by the application of some powerful escharotic. In speaking of the causes of fistula, we shall do well, perhaps, as we go on, to describe the symptoms attendant upon each form of the disease.

Mr. Cooper remarks that collections of matter, from inflammation, wherever formed, if they be not opened in time, and in a proper manner, do often burst. The hole through which the matter finds vent is generally small, and not often situated in the most convenient, or most dependent part of the tumor; it, therefore, is unfit for the discharge of all the contents of the tumor, and instead of closing, contracts itself to a smaller size, and becoming hard at its edges, continues to drain off what is furnished by the sides of the cavity.

All abscesses near the rectum may, without some little care and attention in their examination, be mistaken for fistula when suffered to burst; the little opening, with its indurated edges, leading to a large hollow cavity; the daily discolouration of the linen, by a slight discharge from its sides of matter, and the general hardness of the surrounding parts, all tend to confirm the supposition that there is a fistula; nor is the difficulty lessened by the variety of forms such abscesses assume. Sometimes the patient is attacked with rigors, followed by pain in the part, and hardness of the buttock, which assumes a bright red tinge; in a few days, a portion of the swelling becomes of a deeper red, the integument covering it grows gradually thinner, and a sense of fluctuation is communicated to the finger. However

great may have been the pain—however tender the part—much as the general system may have sympathised—may have suffered—all the unfavourable symptoms subside with the evacuation of the matter. The redness, sometimes, is more diffused, the hardness being less circumscribed; the skin assuming an erysipelatous appearance. The inflammation here is evidently more superficial, and the disease subsides without the formation of any considerable quantity of matter.

Again, neither of the above states may be the condition of our patient; instead of the bright red on the surface of the skin, with considerable pain, and a large, hard, and circumscribed tumor, or an erysipelatous blush over the surface of the skin, we may have a destruction of the cellular membrane, and a carbuncular kind of inflammation. The skin is of a dirty red colour, something like the broken surfaces of an old brick, or even may assume a purple tinge; the surrounding parts, it is true, are something harder than usual, but they communicate not the peculiar feel which we have either in phlegmon or erysipelas. The sufferer has, at first, a full, hard, whipcord-like pulse, and great thirst; complains of head-ache, and is very restless. The tongue is dry and coated, and the motions unhealthy; there is some feeling of tenderness over the region of the liver, with a peculiar sallow countenance. If the disease be not checked by proper treatment the pulse becomes faint, fluttering, and unequal; the strength gradually decreases. The matter is small in quantity, and of a peculiar unhealthy character, and the adipose membrane is sloughy throughout the whole extent of this discoloured surface.

It has been remarked by Mr. Pott that the disease now and then commences in the induration of the skin, near to the verge of the anus, but without any pain; the hardened surface gradually softening, at length breaks, and the matter is discharged. For the most part it is healthy and small in quantity, and the wound, being superficial, soon heals; it now and then, however, happens that the cavity is of very considerable size, and the matter discharged, large in quantity and particularly offensive. I remember the case of a poor woman suffering from softened

tubercles of the lungs, who was not aware of the existence of a fistula before the abscess broke one night, when in bed, and discharged a considerable quantity of matter. Sir B. C. Brodie has related the case of a gentleman who was not aware of the existence of any local disease. He had for some time past been subject to head-ache, was languid, and obliged to go home and lie down for a few hours in the middle of the day. One morning, as he was walking in the street, the abscess burst, and discharged its contents, which was the first intimation he had of its existence.

In cases like this, it is quite evident that to prevent suppuration is out of the question; the sooner matter forms the better; nature may, therefore, be assisted by fomentations of warm water and linseed-meal poultices. Mr. Pott used to allow the skin to become very thin before he made an opening, but in the present day it is thought (and doubtless is) better to freely evacuate the contents of the abscess as soon as matter is formed; leeches and cold lotions are worse than useless, and in some cases I have even seen them continued long after the matter had formed. This kind of tumor is generally found in persons of very full habit, as butchers and farmers; in men who consider it necessary to partake of animal food three or four times in twenty-four hours, and therefore, in some cases it may be necessary, if the pain be great, and the constitutional symptoms run high, to bleed, and to moderate the inflammation by gentle cathartics; or one or two small doses of calomel, followed by saline aperients, and very small doses of emetic tartar. If the inflammation be of the erysipelatous character, it is of no use to remain until matter forms; the quantity is very small in comparison with the size of the swelling, which is, in truth, not a separate cavity containing pus, but a dead, sloughy, fœtid condition of the cellular membrane; it is, therefore, evident that the sooner we lay this open with the knife the better: if we remain till the matter comes to a point, we may remain long enough; we are waiting for that which will never take place, and all the time that we are looking on with our hands in our pockets, doing nothing, the disease is extending itself into the surrounding parts.

But we have mentioned a third form in

which the skin puts on a dirty brick-dust or purple colour, and has a doughy feel, and is possessed of little sensibility; when conjoined to such appearances we have a weak, small pulse, a declining appetite, a continual drowsiness, a failure of strength, and a lowness of spirits, the case becomes truly fearful; for experience teaches us that death will sooner or later terminate the case. It is needless to point out the subjects of such attacks; there is evidently some want of tone in the system—some want of nervous energy; this may be constitutional, but more frequently we find it produced by intemperance and dissipation. Strangury, dysury, and sometimes complete retention of urine, may be produced by abscesses near the rectum and neck of the bladder, of course more frequently when the abscess has formed; in the latter situation the retention may continue until the evacuation of the pent up matter; or commencing with the first blush of inflammation, subside in ten or twelve hours, long before suppuration takes place.

It has often been attempted by designing quacks to throw a cloud of mystery over diseases of the rectum, endeavouring to separate them from the principles of general surgery; and it would be well if the public mind were disabused from this foolish notion: it would be well for them to know that the human frame can only be regarded as one; to be aware that the stomach, brain, lungs, heart, and intestines, are not to be acted upon as mere mechanical contrivances for the transmission of certain extraneous substances; on the contrary, they are highly organized, highly sensific parts, giving and receiving acute sympathies to and from the other portions of the economy; and this knowledge alone will enable them to avoid the non-cutting operations of designing charlatans, the following, whose creed is either the besetting fashion or besetting ignorance of the present day. It is upon the public at large that the knaves fatten, while their terrified and poisoned victims quail under their grimaces, and totter to an untimely grave under their ligatures and drugs. But says Mr Liston, "there is no such difficulty as has been supposed in understanding the nature of diseases of the rectum: the principles which should guide their management are simple and the means operative, and otherwise easily enough applied."

The cause being removed, the local treatment is simple enough, and remedies may be applied to the part with every prospect of success, and the hope of speedy relief, with every certainty of that hope being realized, honestly held out to the patient. But to what are we to trace congestion of the lower bowel, hæmorrhoids, protrusion of the lining membrane, every kind of inflammatory swelling, acute and chronic abscess, and almost their invariable result—*Fistula in Ano*? In my opinion, to a disordered condition of chylopoietic viscera, and to some irritation or enlargement of the genito-urinary organs. The evacuation of the contents of the alimentary canal, and a prevention of their accumulation for the future, an improvement of the condition of its lining membrane, and the secretion from it by injections and a well-regulated diet, must therefore be enjoined; nor must it be forgotten that such a state of things is frequently produced by a derangement of the liver; hepatic diseases must not therefore be overlooked. The best medicine to effect this will be small doses of blue and compound rhubarb pills at bed time, with a warm aperient draught morning and midday.

Again, some cases will require attention to be paid to the viscera of the pelvis; in fact, any thing which tends to produce or keep up irritation must as soon as possible be removed.

Some persons are habitually costive, which is almost always accompanied with a painful distension and enlargement of the hæmorrhoidal vessels, both internal and external; if a considerable load of hardened feces be detained in the large intestines, the system generally becomes disordered; and the symptomatic fever, accompanying the formation of matter, is considerably increased by this state of things; if, then, the vessels surrounding the rectum are distended, as they are both large and very numerous, it necessarily follows that all the evils of inflammation and irritation are augmented. Hence, we must employ a mild, laxative, and cooling diet; clysters of warm water should be frequently thrown up the rectum; this will not only soften the swollen and indurated piles, but also tend to prevent the formation of matter. I have spoken of habitual costiveness as a frequent attendant upon this kind of inflammatory swelling. Persons so afflicted will do well to study the rules laid

down by Dr. Burne, in his late valuable work. This condition of the body may, I am certain, be removed by making it a rule to endeavour always to evacuate the contents of the bowels at one stated period,—say after breakfast; by never resisting the calls of nature, and by the frequent use of lavements: no patient can object to so simple a remedy; and if relief can be obtained in a few minutes by the injection of a few ounces of warm water, surely so simple a plan must be far preferable to the daily exhibition of drastic pills and violent purges. The evil ends not here; by the constant use of purgative medicines, it is difficult to obtain any evacuation of the contents of the bowel without their use; and I have been consulted in numerous cases where this costive state of the body was induced by the folly just alluded to, and in which I have succeeded at once in effecting a cure by the simple plan above mentioned.

We find that in many patients who consult us for diseases of the rectum, this is not the only complaint under which they are suffering; and before we decide upon an operation it will be necessary to discover whether any symptoms are present denoting the impossibility of effecting a cure by the usual means; for it would be unpardonable only to discover this when we find that the divided sinus will not heal. Abscesses near the rectum are frequently present in patients labouring under diseases of the lung: it will, therefore, says Sir B. C. Brodie, be very prudent to ascertain if they exist. "Persons," he continues, "with diseased livers and other visceral diseases, are liable to the formation of such abscesses." Two reasons, therefore, will prevent our operating in such cases: first, because we should not get the parts to heal; and, secondly, because if we did so, in all probability the disease of the internal organ would then proceed with increased speed: and for the reason first stated no surgeon would be justified in performing any operation if stricture or carcinoma be present; it is useless to do so—the parts will never heal, however frequently we may lay them open. All we can do in such cases is but little; we may endeavour by air and proper exercise to render a miserable life as tolerable as possible, under existing circumstances; by opiates or injections of starch and opium, to relieve the poor creatures' most

acute sufferings; and by frequently changing the linen, and washing the parts with warm water, and a solution of chloride of lime and water, to render them as comfortable as we can.

II. *The treatment of Fistula in Ano.*

From what has already been said in speaking of the causes of this disease, it will at once appear evident that before any operation be attempted for the relief of the local affection, the general state of the patients health must be attended to. If the fistula has been the result of constipated bowels, that must be obviated, and, in fact, whatever may have been the predisposing cause, it must be removed. The great fault of the hospital practice in Paris is non-attendance to the state of the system. French surgery consists in the dexterous performance of difficult operations; they combine not the office of the physician with that of the surgeon; and no man can be a good surgeon who is not at the same time fully competent to attend to the medical as well as surgical treatment of his patient; in truth, all the best surgeons of the past and present day have been and are good physicians also. To quote the words of a very high living authority, "surgery in France is nothing but operations, and the after treatment in cases of operation is little attended to." The treatment of these cases as far as the knife is concerned, consists in laying open and dividing the sinus or sinuses in such a way that matter cannot by any possibility be retained; such cavities should be opened into the rectum. The dressing should consist of a bit of thin lint, covered with some simple ointment, as dry lint is very apt to produce irritation and uneasiness.

When the intestine is found to be separated from the surrounding parts by the matter, the operation of dividing it should be performed at the time the abscess is first opened, and not deferred. If it be done properly, little additional pain will be experienced, so little in fact that the patient will be unable to distinguish the opening of the abscess from the cutting of the rectum; but if left for a time another operation has to be performed, and the patient is kept in a feverish state of anxiety by the continued dread of a second cutting. Mr. Liston, however, is of opinion that this ought not to be done; he observes, that "it has been recommended that in abscesses extending

along the gut, the cavities of the bowel and abscess should at once be laid open, and into each other, by the same incision; I have done so, but always found the cure to be tedious. It is better that the matter should first be evacuated through an external opening, that the painful symptoms and constitutional disturbance should be allowed to subside; and after the cavity has contracted, and the extent of the sinus been ascertained, the operation should be performed."

It must ever be remembered that after an abscess near the rectum has been opened by a simple incision, and its contents evacuated, a cavity is left, which cavity has to be filled up; this will be best effected by the dressing being as simple as possible, and small in quantity: nature must be in a great measure allowed, unassisted, to do her own work. By such treatment a large abscess will sometimes be cured without any necessity of meddling with the bowel; but in the majority of cases, although there may be no communication between the abscess and the intestine, still its coats are so injured that the abscess will never heal until both are laid into one. The aim of this operation is to divide the gut from the anus as high up as the top of the cavity in which the pus has been formed; for, by thus laying the cavity of the intestine and the cavity of the abscess into each other, we produce an open wound in the place of a fistulous sinus; we prevent the lodgment of matter, which is enabled to escape as soon as formed, and by frequent ablutions with tepid water and proper dressings the patient soon recovers.

But the operation is performed on another principle, well described by Sir B. C. Brodie, whose words I shall take the liberty of quoting. "When the abscess is laid open, the fibres between it and the bowel must be divided, and the sphincter muscle being thus set at liberty, not only is there a free and ready escape for the matter, but the action of the muscle which prevents the healing of the abscess is put an end to. This then is the mode of curing the abscess: lay it open into the bowel, dividing at the same time the fibres of the sphincter muscle which lie over it."

For this operation the probe-pointed knife, with a long and strong narrow blade, will be the instrument selected. The finger must be introduced in the bowel till the point of the knife is felt,

which, being taken hold of by the finger, is prevented from deviating, and the parts are thus freely laid open. If there be no opening between the abscess and the rectum, very little force will be required to make one; the knife is in either case received by the finger, and the operation very easily performed.

The operation over, the wound must not be crammed full of all kinds of dressings; nothing should be applied that is at all irritating. One very troublesome symptom following the operation for fistula is a diarrhœa, attended with tenesmus. I do not contend that such symptoms may not be produced by the mere division of the sinuses, but in the cases I have seen it could be traced to improper dressing; for every application not of the simplest nature, particularly if forced to the very bottom of the wound, is certain to produce a painful irritation in the extremity of the gut; and as this irritation is almost always attended with frequent discharge of fœces, it proves not only debilitating to the system, but also tends very considerably to interrupt the completion of the cure.

The night before the operation is performed it will be advisable to give a dose of blue pill and colocynth, followed early in the morning by a senna draught, so that the bowels may be freely opened and the large intestines emptied of their contents; for this purpose clysters are particularly useful. As soon as the operation is performed the wound should be lightly dressed with lint covered with the ungt. cetaceum, or an ointment composed of olive oil and wax; the sores first being well cleansed with water: this completed, and a compress, secured by a T bandage, applied over the whole, the patient should be carried to bed, and a dose of liquor opii given, not so much for the purpose of allaying pain as to produce costiveness. Nor must we allow our patient much food; a little toasted bread, and a small quantity of rice pudding will be all he will require: you wish to keep the parts in a state of rest, the giving a large quantity of food therefore is worse than useless. The dressings must be removed after every stool, if these are frequent; the parts being each time well cleansed with warm water: thus treated, the sore will heal exactly as if in any other part of the body, for in spite of every effort made to induce us to suppose something peculiar or mysterious to exist in sores about the

anus, the fact is undoubted that they are of the same nature, and heal in exactly the same manner as any other sore in any other part of the body. They must therefore be treated in exactly the same manner—be lightly dressed, and kept perfectly clean; care being taken to remove any fœces that may lodge in the lips of the wound, as gently and with as little force as possible. We have already remarked that by steadily persevering in this simple plan of treatment, the end in view will generally be obtained. This is not however always the case; instead of laudable pus, with fresh, red granulations, with which the wound when healthy will always be covered, it may acquire an unhealthy, soft, flabby appearance, the matter discharged from it being then fetid, and in some cases highly offensive, and mixed with blood: this may arise from two causes.

First, from some morbid condition of the system; from some derangement of the chylopoietic functions, which must at once be attended to; their healthy condition restored, the wound changes its aspect, and heals kindly.

But we may not always have it in our power to remove this condition of the system which may be produced by organic disease, by some affection of the lungs or liver, and therefore we must (as before remarked) be ever careful to discover that no such disease exists before the operation is commenced; for even if we could remove the fistula, and dry up the discharge, it would not be prudent to do so, as in all probability the internal disease would advance more rapidly.

Secondly; this unhealthy condition of the parts may be induced by a sinus, perhaps situated at some distance from the verge of the anus. Upon examination, the matter is found to lodge in it; it must therefore be at once freely laid open, and instantaneous relief will in all probability be experienced.

"Sometimes," says Sir Benjamin Brodie, "in attempting to cure what seems to be a common fistula, we find that it does not get well, and in the end a copious abscess is discovered high up, which prevents the smaller ones from healing." He relates the case of a lady on whom he operated for several sinuses near the rectum, but she continued uncured for a considerable time, during all which she complained of uneasy sensations, which could not be accounted for.

After repeated examinations, a sinus was detected high up; not more than an inch in length, and seemingly involving the levator ani. This having been laid open, a cure soon followed. Now and then we may meet with a case where an abscess near the rectum having discharged its contents heals up; but for the most part it continues discharging more or less. The surgeon just quoted, who, perhaps, has had more experience than any other man, remembers the case of a gentleman who had suffered from an abscess near the rectum for twenty years, sometimes discharging a little, then stopping, then discharging again. Three or four months before he was consulted, the orifice closed, and did not open again as usual; after this, the patient began to suffer much pain, and became exceedingly ill. The rectum was examined, and a large abscess discovered; a lancet was introduced by the side of the rectum, and it passed quite up to the handle before the matter was reached. When a little matter had escaped, a director was introduced, and about a pint of highly offensive matter escaped. The wound required to be again dilated, and the patient recovered.

"In all cases in which there is a communication between the cavity of the abscess and the bowel, the discharge is doubtless kept up by the escape into it of flatus and fluid fæces; its fistula may consist of one sinus, more or less, narrower, and extensive, running from an opening between the verge of the anus and the point of the hip towards and along the coats of the bowel—the blind external form; or there may be a communication established with the rectum some where above the sphincter—the complete form: more openings than one may exist in the integument, and there may be a good deal of hardness around. Several tracks may communicate with the principal one from the buttock, perineum, &c. the result either of the large original abscess, or of consecutive ones."—(Vide Liston's *Operative Surgery*, page 387.)

With the view, then, of favouring the contraction of the suppurating tracks, and of causing sores about the anus to become healthy, an operation is to be undertaken; and in order to remove the irritability and painful contraction of the orifice of the bowel, the surgeon

must widen the outlet, and destroy for a time the action of the sphincter.

The more steps of the operation I shall not dwell upon; they are described in every work on surgery, particularly in the valuable work of Mr. Liston, "*on Operative Surgery*." After the operation has been performed, it is highly advantageous to keep the parts in as quiescent a state as possible for two or three days, particular attention being paid to the simple plan of dressing already pointed out: be it also remembered, that the division of the sphincter is of the utmost importance, inasmuch as it affords that quiet to the parts which alone enables them to heal. I never, except in one case, saw any hæmorrhage arise that could not be stopped by a little bit of lint, and the continued pressure of the finger; and this arose in operating on an abscess, high up, without regarding the highly prudent advice of Sir Benjamin Brodie: "when the abscess is high up by the side of the rectum, and above the sphincter, the lancet is to be carried through the skin by the side of the anus until the matter flows. Then a probe-pointed bistoury must be introduced, and the rectum divided at the lower part of the abscess, and the incision carried through the sphincter."

Like all other operations, that for fistula in ano may be followed by erysipelas; and some instances are recorded in which it has been followed by traumatic tetanus. Sir B. C. Brodie mentions a form of erysipelas not described, that I remember, by any other surgeon, in which it extends along the mucous membrane of the rectum into other parts of the intestinal canal. The pulse becomes rapid, weak, irregular, and intermitting. The abdomen tympanitic; there is great prostration of strength; and the patient expires in three or four days, sometimes sooner. In the case of a lady, the attack began when the incisions had nearly healed up, and died in forty-eight hours. I have, however, not as yet met with such a case, which doubtless is uncommon.

M. Roux, of the Hôtel-Dieu, Paris, performs this operation in a different manner to that performed by Pott, and followed by English surgeons. He introduces a long piece of boxwood into the rectum, having its concavity towards the fistula. A silver director is then

introduced along the fistulous track, and its end made to come in contact with the wooden gorget in the bowel. A long, strong, narrow sharp-pointed knife is then introduced along it, till it comes in contact with the piece of boxwood. The director is then withdrawn, and by keeping the point of the knife fixed upon the gorget, and withdrawing both together, all the parts between the fistula and the rectum are divided. This part of the operation completed, the bistoury is exchanged for a scalpel, and all the hardened base is carefully dissected out. A thick long probe is then procured, having a button at one end; this is covered with charpie, smeared over with some yellow-looking ointment, and the wound crammed full of it to the bottom.

This operation I ever have regarded as open to three objections. 1st. The boxwood gorget can only be of use in saving the finger of the surgeon, which is not very likely to be injured; and if the finger be not employed, the sense of touch cannot be available, and we are operating in the dark with nothing to guide us. Nor is it a very easy matter to introduce the point of a director at once through the opening into the rectum; this is admitted by M. Richerand, who adds, "that in this circumstance, the point of the director may be introduced into the rectum without lessening the chance of the success of the operation."

2nd. I object to the dissecting out of the hardened integument at the edges of the fistula, which is done by two incisions crossing each other at right angles, the flaps being each lifted up with a pair of forceps, and cut out with the knife. What end is sought by this part of the operation? what object is there in view? what good can possibly result from it? what advantage attends this increase of suffering to the patient? The old surgeons supposed that there was something malignant in the hardness and callosity attending this disease, and were not content with opening the cavities, but endeavoured to dissect out the whole of the parts, and if unable to do this, they finished the work with the red-hot iron. Such practice may be worthy of a day gone by, but certainly not of the nineteenth century.

3rd. I must beg leave to enter my most earnest protest against filling the wound daily with large quantities of

charpie. This plan is attended with great pain, produces considerable uneasiness, and most certainly impedes the cure. The wound cannot be dressed too lightly, and the less it is disturbed the better. But if the surgeon crams it every day with lint or charpie, the sides of the cavity cannot contract; they become hard and callous, nor is there any thing in my opinion so likely to reproduce the disease as this system of filling it with dressings. Mr. Cooper, of University College, well remarks, "a sore so cramped will not permit the matter to escape. A patient, who has been so treated, has generally some degree of fever; has a pulse which is too hard and too quick; is thirsty; and does not get his due quantity of natural rest."

When a sore has been so treated, there always is a very considerable degree of inflammation about the verge of the anus, the lips of the wound are tumid and everted, red, and painful in a high degree, and all the lower portion of the bowel partakes of this state of things, producing frequent desire to go to stool, and considerable irritation; nor is any thing more calculated to produce that fatal erysipelas before described than this mismanagement of the wound. If we were called upon to treat such a case, the first thing would be to remove the dressings to foment the wound with warm water. At the same time attention must be paid to the state of the system, and treatment directed to calm the general disturbance that may have arisen made use of.

M. Roux, whose talents and great experience entitle any opinions he may express to the greatest possible attention and respect, in a critique published some years ago, upon the manner of performing this operation in England, censures our plan of not filling the wound with charpie; but, says Sir B. C. Brodie, "it is chiefly in consequence of the use of too much lint in dressing that further operations are so frequently required before the cure is completed;" this opinion also coincides with the experience of Mr. Liston, who strongly reprobates the plan of filling the wound with lint or charpie.

I have thus endeavoured to group together the most important and interesting facts connected with the causes and treatment of fistula in ano; the study of this disease is of considerable

interest, and highly important, from the frequency with which it occurs. The subject is, however, far from exhausted, and before long I trust to be able to resume its examination. In conclusion, however, may I be permitted to advise such of the readers of "The London Medical Gazette" as are students, carefully to examine every case of fistula they may meet with in the wards of the hospital, and to attend the *post-mortem* examination of such cases as may die from other disease, but who may have fistula also. We are all of us too apt to neglect, when students, "those simple cases," as we term them, forgetting that, in the majority of patients, such "simple cases" will be what we shall be called upon to treat. On the successful treatment of such "simple cases," the foundation for future fame is laid; and wise is that man who not only attends to cases of hernia and stone, and the operations for them, but also devotes some portion of his time to the study of the treatment of simple wounds and ulcerated legs. Nor will any class of cases that he can select be more worthy of his most careful attention than diseases of the lower bowel; for when in practice for himself, no disease will more frequently require the exercise of his professional skill than fistula in ano.

Bath Place, June 1840.

REPORTS OF CASES, &c.

By H. M. HUGHES, M.D.,

Physician to the Surrey Dispensary.

RUBEOLA.

THERE are perhaps few diseases which, regard being paid to all its relations, present more anomalies than measles. Whether the medical history, the severity, the plans of treatment that have been adopted, or the progress and termination of the complaint, are considered, it may be said to abound in varieties. In the main, regular, as to the duration of the preliminary fever, it sometimes comes on without any premonitory symptoms whatever, and constitutes the *rubeola sine catarrho* of Willan. Frequently, perhaps generally, of so mild a character as to require little or no medical superintendence, and often treated by the never-failing *saffron tea* alone; it appears according to the statement of Sydenham,

to have been the cause in his time of more deaths than even the small-pox, unmitigated as it then was by either inoculation or vaccination; and if the pneumonia, acute bronchitis, cancrum oris, and sloughing, which occasionally succeed to it, are taken into the account, it may perhaps be with truth asserted, that it is even, at the present day, the most fatal scourge of the infant population of this country.

The most opposite plans of treatment have been at various times, and by different authors, practised and advocated. Sydenham's treatment during the existence of the rash was very simple, and he recommended venesection only when the "eruptions turned livid or black," and when "after the departure of the disease, symptoms of peripneumony supervened." Mead advised blood to be taken away before the rash appeared, or if that could not be effected, after it had come out, with the view of preventing, as speedily as possible, the inflammation of the lungs—the source of the greatest danger. Heberden says, in like manner, "bleeding may be used at any time of the measles, and is always beneficial where the symptoms are very distressing, particularly if there is an oppression of the breath." Mr. Magrath, of Plymouth, has used and recommended cold affusion, from which he never witnessed any untoward circumstances, and which, he was persuaded, prevented the inflammatory affections of the chest, which often appear on the decline of the rash, by the suppression of the early excitement; to the violence of which they are, he supposes, chiefly attributable. Other, and by no means the least successful, practitioners administer ammonia and stimulating diaphoretics, with the view of increasing the cutaneous efflorescence, and producing an abundant and vivid rash, with the same ulterior object as those who adopt an antiphlogistic plan. I have heard it asserted that a gentleman who employed ammonia, and other stimulants, had, after an active practice of forty years, never lost a single case of measles. Whatever may be thought of the practice adopted, I fear that an equal amount of success has fallen to the lot of very few. In the treatment of measles, as in most other cases, the proverb "in medio tutissimus" will, I believe, be found the safest guide to practice, under circumstances in which opposite extremes have

been advocated. From personal observation, I am inclined to think that any very active treatment, whether of the antiphlogistic or stimulating kind, in the ordinary forms of the complaint, is likely to be prejudicial, and that the disease would generally terminate more successfully if the operations of nature were less interfered with. Many children do perfectly well without any medicine, or at most with a little saffron tea—the constant remedy of nurses and grand-mammas; and I feel assured that here, as well as in the scarlatina simplex, the disease may become dangerous, “*a minia diligentia medici.*” Dr. Willan has, with his ordinary good judgment, stated that the mere oppression of the respiration and the labouring pulse, on the first or second day of the eruption, are common to other eruptive fevers, and usually disappear in the course of a few hours; but that when the rash has disappeared, and symptoms of thoracic inflammation become severe, venesection, cupping, and other similar remedies, may be repeatedly necessary. Every practical observer will, I think, acknowledge the general accuracy of these remarks; my own experience certainly accords with them, and by no means supports the notion that the subsequent affection of the chest bears a direct proportion to the amount of cutaneous excitement. I have, on the contrary, often seen the most vivid rash, with turgid face and swollen eyelids, disappear without being followed by any serious obstruction to the breathing, and sometimes with scarcely any pulmonary complaint whatever. On the other hand, I have seen the most dangerous disease of the lungs, or bronchia, supervene upon the sudden retrocession of the rash, and on this account have been particularly careful, during the progress of measles, to prevent the exposure of the surface to cold. Gentle laxatives, salines, and light bed-clothing, have been ordered, when the rash has been general and vivid; but diaphoretics, with ammonia, and the warm bath, have been prescribed when the surface has been cool, and the eruption slight and pale. I have, I believe, never thought it necessary to abstract blood generally, and but very rarely locally, during the existence of the disease itself. When, however, the rash has disappeared, and the measles, properly so called, have ceased, the secondary affections I have

often found not only to bear, but to demand very active treatment. The use of mercury, however, if possible, and of blisters, I have endeavoured to avoid, as sloughing blisters, and gangrene of the mouth, always indicative of danger, and usually followed by fatal consequences, particularly in young children, are, I believe, in no disease so common as after measles. Without intending to assert, or even to imply, that *cancerum oris*, as it is improperly termed, never occurs where mercury has not been administered, it is, I believe, generally admitted that the disease usually follows the use of that medicine, and appears to depend upon its peculiar action on the gums, cheeks, or lips; although sometimes exhibited only in such small, occasional, and alterative doses, as, in the ordinary state of the body, would have produced no effect upon the mouth. Though, therefore, the essential cause of this horrible disease, without doubt, exists in the state of the constitution at the time, its immediately exciting cause appears in many cases to be the local irritation produced by the action of mercury: on that account I refrain, as much as possible, from its employment. In consequence of the great tendency in measles of blistered surfaces to slough, which cannot always be prevented by the interposition of lawn paper, or gauze between the blister and the skin, or by the removal of the vesicatory after a certain number of hours, I rarely, if ever, make use of them as counter-irritants in the inflammatory affections of the chest, which so frequently succeed to that complaint.

But though the gangrene of the mouth, and the sloughing of blisters, are almost always followed by death, neither they nor pneumonia have, in my experience, proved so fatal after measles as acute bronchitis, with want of power. Perhaps those only who are in the habit of seeing disease among the poor are fully aware of the severity and unmanageable character of this affection, as those only have an opportunity of witnessing the complaint fully established, and far advanced before any medical treatment has been adopted for its removal. I know not any disease in which I have been more foiled in affording even temporary relief to distressing symptoms, in which contra-indications have been so numerous, or so perplexing, and in which all the remedies employed

have so completely failed in producing any beneficial effect, as in the affection under consideration. Called to young children, who have just passed through measles, who have already been suffering from their complicated disease for two or three days, without any regular medical advice, and who have been given up to other hands by the quacks, nurses, or druggists, who had previously prescribed for them just at the time when almost all hope of any efficient treatment had passed, I have not unfrequently found them with a pallid skin, cool or cold extremities; purple cheeks and lips; a tongue coated and moist, but of a deep blue colour; dilated and inactive pupils; lethargic drowsiness, heaviness, and tendency to coma; profuse diarrhœa; hurried respiration, with a loud mucous and soft crepitating rattle in every part of the chest; and a weak, frequent, and fluttering pulse. When some of these symptoms appear at the onset of measles, the late Dr. Armstrong recommended "the prompt administration of a warm bath, a moderate bleeding, an antimonial emetic, and a purgative;" and says that, "unless they are quickly employed, the little patient sinks rapidly under an apparent load of phlegm in the bronchia," and when the physician is called, early in the progress of this complaint, though succeeding to measles, these remedies may be generally useful in relieving or even efficient to cure; but when they have already existed several days without treatment, and have arrived at the stage which I have briefly sketched above, the employment of the active means advocated by him will, I think, be found not only inapplicable and unefficacious, but dangerous and even fatal. The warm bath, leeches, and mustard poultices to the chest, mineral emetics, antimonials, aperients, stimulants, and calomel, in various combinations and at different times, I have tried without any good effect, and I must confess myself still undecided as to the most desirable mode of treatment, as all hitherto tried have signally failed.

The cases of measles which I have seen during the past year, however, with the exception of the following, which for many days I expected to terminate fatally, have all been of a character so mild and regular, that it would be useless farther to refer to them.

M. A. Nash, aged 9, a small delicate

child, of light complexion, who from infancy had been far from robust, came under my care Oct. 17, 1839. She resided in a confined alley, and had two days before been rather suddenly attacked with vomiting, epistaxis, and purging; the matters passed by the bowels being semifluid and sanguinolent, and the dejections occurring from eight to ten times in the twelve hours. She complained of considerable pain and griping of the abdomen, but had no coryza, sneezing, or cough. The skin was not hot, but there was a slightly elevated rash on the trunk and extremities, composed of spots rather larger than millet seed, of a dark crimson colour, and not arranged crescentically. The tongue was rather dry, the tip and edges red, and the dorsum coated with yellowish fur. The face was not swollen, nor the conjunctiva injected; but considerable languor, and some anxiety, were depicted in the countenance, and some tenderness existed on pressure at the *scrobiculus cordis*: the pulse was small, frequent, and sharp. As neither the premonitory symptoms nor the rash were characteristic of measles, I was at first disposed to doubt the existence of that complaint, and to consider the affection as *purpura urticans*; but from the fact of rubeola being prevalent in the immediate vicinity, and a child having died of it in the next house two or three days before, I concluded that my patient was suffering from an irregular form of the disease. This opinion was afterwards verified by three children in the same family being attacked with measles in its ordinary and milder form. Some practitioners would probably have ordered venesection in this case, with a view of relieving the internal congestion, and though I think it would have been a hazardous expedient, it might possibly have been more quickly effectual than the temporising plan of treatment which I adopted in consequence of the natural debility of the child, and the additional weakness already induced by the epistaxis and the diarrhœa. She was ordered simply—

Pulv. Ipecac. gr. x. ft. pulv. emetic. st. sumend.—Ol. Ricini, ʒij. hor. ij. post pulv. sumend.; et Mist. Cretæ, ʒiv. cujus capt. ʒss. hor. iv. post ol. et singulis 4tis horis.—To be kept warm.

18th.—The emetic acted well; the

bowels still were much relaxed; the motions reported to be very fœtid, and to resemble soot and water. The rash was more distinct on the hands, arms, and lower extremities, but of the same dull colour and irregular form as the day before. She had no swelling of the face or hands, but complained much of headache and pain of the abdomen; the face was rather flushed, and the conjunctiva slightly injected; pulse feeble.

Hirudines iij. temporal. Applicand.
Fotus Papav. abdomin.

R Mist. Cretæ, ʒj.; Conf. Aromat. gr. x.; Tr. Opii, ʒij.; Tr. Cinnam. C. ʒxv. 4tis horis.

19th.—Pain of head relieved by the leeches, but the diarrhœa continued, though the evacuations were of more natural colour. She had some hacking cough, with much bronchial rattle, but no heat of skin, dulness on percussion, or crepitation, in any part of the chest, and the rash was fading.

Lin. Ammon. thoraci infricand.

R Syr. Papav. ʒj.; Mist. Amyli, ʒj. st. injiciend., et rep. vespere si opus fuerit.
Cont. mist.

She continued without much alteration till the 22d, when symptoms of laryngitis appeared, viz. loss of voice, pain, and tenderness of the larynx; a frequent, shrill, and crowing cough; a rather hot and dry skin; and a more jerking pulse; in consequence of which I thought it necessary, notwithstanding my fear of its injurious operation in and after measles, and the still remaining diarrhœa, to administer calomel. I therefore ordered, together with the mixture formerly prescribed—

Pulv. Cretæ C. gr. v.; Hydrarg. Chlorid. gr. j.; Antim. Tart. gr. ʒ; Pulv. Ipecac. C. gr. j. M. ft. pulv. 4tis horis sumend.

The next day the pain of the larynx, and the other symptoms of inflammation of that part, had increased; but as the diarrhœa and pain of the abdomen had not been aggravated, I ordered her to continue her medicines.

25th.—The laryngeal symptoms were less urgent, and the powders, therefore, ordered to be given only every six hours, and the next day every eight hours.

29th.—Laryngeal symptoms almost gone; appeared exceedingly feeble; bowels still relaxed, but complained of no pain, and had little or no cough.

R Inf. Gentian. C. ʒss.; Tr. Catechu, ʒss.; Syr. Papaver. ʒxx.; Conf. Aromat. gr. x. 6tis horis sumend.

The bowels from this time became gradually more regular; and after a course of astringent tonics of nearly three months' duration, she slowly regained her strength, and was at length discharged perfectly well.

14, St. Thomas's Street,
June 18, 1840.

SWALLOWING PINS.

To the Editor of the Medical Gazette.

SIR,

I AM induced to forward the following curious case for insertion in your journal, should you think it sufficiently interesting. Although I am aware it is not the first or second of the kind on record, yet, I believe, more pins and needles have been extracted than from any other.

Your obedient servant,

H. BIRT, M.R.C.S.L.

Ashington Storrington, Sussex,
June 13th, 1840.

Fanny Jeal, æt. 23, of West Chillington, became an inmate of the Thakeham Union House, in July, 1839. Previously to this she had been under the care of R. H. Hurst, Esq., of District 1, in the same Union, who had extracted 27 pins from the left mamma. On examining the cuticular surface, I could discover several others on the left side of the neck, face, forehead, about the orbit, on the breast, left knee, ankle, and foot. She had been accustomed to paupers' diet, which being on the Malthusian principle had no tendency in assisting the vis medicatrix naturæ in bringing them sufficiently near the surface for extraction. However, this was ultimately effected, by allowing three half pints of porter daily, with animal food ad libitum. In the course of four months from the time of her admission, I find on referring to my notes I had extracted 254 pins and needles; all, with the exception of one pin, had lost their heads, and this head was so small as to be scarcely perceptible.

She is now gone to her parents, restored to her pristine health and bodily feeling. From what few facts I can gain of her history, these pins (that is, the greater portion) have been lying dormant in the

system for the astounding period of thirteen years. About that period she was accustomed to swallow them, for no other motive than puerile aggrandisement, or a spirit of daring, or for the palatable delights of barley-sugar or gingerbread. She has frequently had pulmonic attacks similar to pneumonia, affecting only the lobes of the left lung, which mostly have been difficult to combat with, since the period of pin-swallowing. Her mother states positively she has not swallowed any since leaving school, or she must have discovered it. The girl also declares she has no recollection of having ever done so; yet I place but little regard on her statement, she being of weak intellect, almost amounting to idiotism. Several of her school-mates can distinctly recollect her having done so, from the motives I have previously mentioned. The two remarkable features of this case are, the pins exuding from the left side of the body only. Can any of your readers favour me hypothetically why?—also the manner in which the heads have become lost? Were they pulled off by the peculiar action (muscular) of the stomach or bowels, after the aperture had been made by the apex for passing through its coats?

TREATMENT OF CROUP.

To the Editor of the Medical Gazette.

SIR,

WILL you allow me to offer a few practical remarks on the treatment of croup, which appear to me of some value, and to lay before the profession my experience of a remedy which has been strongly recommended in the disease just named. I begin with the latter—the remedy. Since I first noticed in the *British and Foreign Review*, April, 1836, the high commendation of the sulphate of copper as a remedy in croup, I have made a fair and careful trial of it in six cases; in all the issue was death. My disappointment has been great; for relying on the authority, the respectable authority, for the success of the sulphate, I hoped that some of that success might fall to my share, and began my trials with considerable hope and confidence. Hoffman gave a quarter to half a grain every two hours, and were we to believe him, with

complete success: during a period of sixteen years he never lost a patient. The success of Serlo and Zimmerman, recorded in Hufeland's *Journal*, would persuade us that no one need now perish of this hitherto very intractable disease; in short, that the age of miracles had returned. In proportion to my expectations was my zeal, and ultimately my disappointment. After experiencing six defeats in succession, is it any wonder that I have now determined to abandon the remedy in despair, and to publish (if you will allow me) the result, to prevent others from being deceived, and having strong hopes grievously blighted, as has been my misfortune.

I may mention the form and doses in which I gave the medicine in question.

CASE.—A fine healthy boy, two and a half years old, was on the 27th of May, during convalescence from measles, seized with croupy cough and hoarseness; he had an emetic of considerable power, and a stimulant embrocation to his throat: four leeches were applied to each foot, an unsuccessful attempt having been made to open a vein, and he had a warm bath. At this stage I first saw him: the remedies employed did no good; his cough and difficulty of breathing were on the 28th decidedly more croupy, and febrile symptoms ran high. I directed twelve leeches to his throat, a blister to the top of sternum and lower part of throat, rubbing in very assiduously of mercurial ointment on several parts of the surface; inhalation of vapour of water, and four grains of the sulphate of copper in an ounce of water, to be followed with a quarter of a grain of the sulphate rubbed up with ten grains of sugar every two hours.

30th.—The four-grain doses of sulph. copper caused severe vomiting, followed by some slight relief, but no very decided improvement: it was carefully administered every two hours. Cont.

June 1st.—The sulphate has been continued for two days; dose occasionally increased to one grain every two hours; sometimes it seemed to cause vomiting. No improvement, cough more frequent, sound of it like barking of a dog, and his breathing is quicker and more difficult; a whitish coating over all inside of throat and fauces; tongue covered with white spots of aphthous character; resonance of chest natural; vesicular respiratory sound gone on right side,

bronchial breathing still heard. Early on 31st. observing but little improvement from *S. cupri*, I thought it prudent not to rely on it alone, and proceeded to the administration of calomel and opium; the sulph. of copper was also continued most regularly: gums are this morning obviously affected by the calomel and inunction.

Cont. *S. Cup. et. Cal. et Op.*

5th.—Aggravation of every symptom: thirst, heat, and dryness of surface: crepitant rattle on right side; percussion natural, or nearly so; tongue covered with innumerable white spots. Is obviously sinking; pulse at wrist gone; eye often fixed; cough gone; voice hoarse or whispering; breathings thirty-six in minute; frequent vomiting; fluid vomited sometimes like prune-juice, but devoid of all smell: restlessness and jactitation.

6th.—Mustard poultices were applied to feet; attempts to give stimulants caused great distress, nearly suffocating him: an attack of convulsions at one A. M., on the cessation of which he seemed much exhausted. Died in twenty minutes thereafter. I need not detail the interesting morbid appearances presented at the post-mortem inspection, though I purpose doing that at another time, as my present object is to speak of the inefficacy of the much lauded *S. cupri*; in another case, I gave it without any other internal medicine.

The case came under my care pretty early in its progress, but the croup was unequivocally formed before I was called; after copious bleeding, general and local, I gave the sulphate, as directed by authority, continued it steadily, and gradually increased the dose. Blisters were applied to the throat, after leeches to the nucha and superior part of chest. I could not perceive the least benefit from the remedy: it caused vomiting at first, the dose being four grains. From a failure of this remedy in a previous case or two, I would not have felt myself warranted in trusting to it, or prosecuting my trial any further; but I justify myself on the grounds that the sulph. cupri may be administered along with the measures in which I have most reason to repose confidence, viz., bleeding, local and general: even these, I acknowledge, have too often failed: but I contend that my experience does not shew that they will derive any increase of power from the remedy proposed—the sulph. cupri; a drug which has failed most egregiously

in my hands. It might be said that I should have had recourse to mercury, a remedy, we are told, enjoying high consideration and repute. On this last point I find practitioners entertaining most opposite opinions, which, from their very contradictory character, neutralize each other, and leave the inquirer to the results of his own proper experience as his guide. I am sorry that I cannot offer my testimony to its efficacy. At the close of a very interesting and fatal case, in which every effort was made that united diligence and skill could accomplish, I find amongst my remarks the following:—"It has been supposed that in those cases in which mercury has failed to cure the disease, that it either had not time, or that it could not affect the system: I have seen it fail in more cases than this, in which it had decidedly produced its peculiar action, and my faith declines daily in its efficacy." 12th of Feb. 1836. In another case, "The gums were rapidly and decidedly affected by assiduous inunction of ungt. hyd. fort., and by calomel with opium, yet the result was fatal, and adding another to my former list of cases, shewing the want of efficacy in the mercurial treatment." I have of late years given an opiate along with the emetic, at the beginning of the disease, and have reason to think highly of the practice. To an infant ill of the disease in question, I give a solution of tart. antimon.; say four grains of the tartrate dissolved in three ounces or three ounces and a half of water, with an ounce or half an ounce of the syrup of poppy, to make up a four ounce mixture: of this I give from half an ounce to an ounce, every fifteen minutes, till free vomiting be induced. I have lately used the solution of one grain to the ounce, and added to the first dose of it as large a dose as caution would permit me to give of the solution of muriate of morphia: the opiate thus given allays the irritation in the air tubes, is immediately followed by rest and sleep, during which the patient may be kept in bed, the best place for him; besides, sleep overpowers him, and the crying and fretfulness so common, and so injuriously irritating to the throat, is completely and happily prevented. I am quite confident that the constant crying of a child after an emetic, given without the anodyne, has frequently aggravated the irritation of the throat, and done much mischief, whereas the deep sleep into

which the opiate, administered at this time, throws the patient, insures exemption from this source of aggravation of the symptoms, and procures a truce with the disease. Nor do I think that the free perspiration which follows an opiate, particularly if bleeding be premised, and a warm bath employed, should pass unnoticed as one of the good effects of this piece of practice. I have also a strong impression that a large opiate in such cases, and in many cases of mucous inflammation, is an auxiliary antiphlogistic of great power. In a case now under treatment I have derived much benefit from opiates: a very stout boy, of three years of age, who was seized, along with a brother, with deep lividity, swelling and pain of fauces: no febrile symptoms; soon the inflamed fauces became covered with a whitish layer, and the larynx became affected in both; one sunk, and died in a most unexpected manner, unexpected by either practitioner or parents, who did not observe the danger, as the constitutional affection was not severe or urgent. The younger boy came under my care, and to him I steadily administered the sol. of muriate of morph. with a most soothing effect; good nights, and days free from the jactitation and distress before experienced. An emetic* with an anodyne admixed in this case brought away the layer of lymph from the fauces with great relief to the breathing and general distress. The parts from which the layer came away presented a very fiery red ulcerated or abraded appearance, and new but very thin patches of lymph formed on them. He has been benefited by touching these parts with equal parts of syrup and mucilage, sharply acidulated with muriatic acid: he has had wine, beef tea, and ale, as he prefers it; and the manifest improvement, together with his having weathered nearly three weeks, encourages us to hope the parents will be spared a double bereavement. With your permission I shall transmit you my notes of a few causes of croup, which I trust may be practically useful, though devoid of any great novelty.—I am, sir,

Your most obedient servant,

ALEX. J. HANNAY, M.D.

Prof. of Physic, Andersonian University, Glasgow.
June 17, 1840.

* I am bound, in candour, to say, that the emetic employed in this case was the sulphate of copper.

A CASE OF CRANIOTOMY.

To the Editor of the Medical Gazette.

SIR,

SHOULD you deem the following case of difficult labour, which occurred in my practice lately, arising from a hydrocephalic head, worthy of a corner of your valuable journal, you will oblige me by inserting it.—I am, sir,

Yours respectfully,

R. ROBERTSON,
Lecturer on Midwifery, University
and King's College.

Aberdeen, June 14, 1840.

On Sunday, the 3d of May, 1840, about ten p. m. I was sent for to see Mrs. McDonald, a poor woman, a patient of my Lying-in-Dispensary. About half-past ten p. m. I visited her, in company with Mr. Shearer, one of my senior pupils, and found her lying in bed; she stated that it was her eighth pregnancy, that she had always previously had natural and easy labours, and had been attended in all her deliveries by a midwife; that she had sent for me on account of her having a presentiment that all was not right with her; and that she felt not as she used to be in any of her former pregnancies; and she told me likewise that she believed she would die before she was delivered. She had been in rather bad health during her present pregnancy; and before my arrival, according to her account, the membranes had ruptured. On making examination, per vaginam, I found the os uteri open to admit two fingers, and the head presenting; the parts of generation moist, from the oozing away of liquor amnii. The pains which she experienced in the abdomen and back did not seem to affect the os uteri in the least, so that after waiting two or three hours in attendance upon her we left her, as she was inclined to sleep, and gave instructions to be sent for when she grew ill again. Accordingly I was sent for on Monday (next day) about five o'clock p. m. Being then in the country, my brother saw her along with the pupil who had visited her with myself the night before; they were informed that she had no pains till afternoon, when they came on very violently; and on making an examination, per vaginam, the os uteri was found dilated to the size of half-a-crown, soft and easily dilatable. The bowels had been open during the day.

She now became so unmanageable that she was continually getting out of bed, and at one time standing on the floor, and at the next tumbling into the bed, and tossing about in all manner of ways, so that they deemed it proper that I should be sent for. Having just arrived from visiting a patient in the country about seven P. M. I went along with the messenger to see her, and found her rolling about in bed, and it was with the greatest difficulty and persuasion that I could get her to lie still for a few minutes till I made an examination: on doing so I found the os uteri dilated to the size of a crown, soft and lax, the occiput presenting, and in the absence of a pain, by carrying my hand into the vagina, I was enabled to get my fingers higher within the pelvis, and make a more accurate examination of it than I otherwise could have done. There was no deformity existing any where, but I could feel the head completely filling the brim of the pelvis, and only a small part coming down, which was the occiput, the greater part remaining above. Her countenance was haggard and wild, her eyes staring, and altogether she had the appearance of a person in a violent fit of mania; her pulse was about 120, skin hot and dry, great thirst, and was constantly getting up to make her water, which she did freely. As the os uteri was not dilated to such a degree as to admit of my assisting her in any way, and as the head was the presenting part, I thought it proper to wait for some time before interfering, and more particularly as it was so difficult to confine her in bed. I may state also that she was permitted frequently to get out of bed, but when up, she could neither stand nor walk, and if not held by an assistant was in danger of falling down. Things continued in this state for a few hours, when I got leave again to make an examination, and found the os uteri only a little more dilated than it was when I examined last: I therefore dispatched my brother to a neighbouring medical friend, whose assistance I wanted; but before his arrival our patient became quiet, and allowed me to do what I pleased to relieve her: she seemed to be completely exhausted, with the strong pains and excitement which she had endured; and finding it was impossible to resort to the use of the long forceps, as the os uteri was not sufficiently dilated to admit of their application, I therefore resolved to

have recourse to the perforator. I had less hesitation in doing so, as our patient informed me she had not felt the movement of her infant for the last twelve hours. There being no time to lose, as she seemed so much exhausted, I introduced the perforator in the space between the os occipitis and the ossa parietalia, being the most depending part of the child's head; when about four pints of clear serous fluid issued out: the bones of the head collapsed, and delivery was effected almost immediately, by the unaided efforts of the uterus: the placenta followed soon afterwards. She was delivered about 1 A.M. on the 5th, just eight hours from the commencement of true uterine action. On visiting her again, at 8 A.M. (the same morning), I found her weak, and complaining of pain in the lower part of the abdomen, which was pretty much swelled, and tender to the touch. Pulse small and wiry, beating 120 in the minute; great thirst; the lochial discharge scanty; and, in short, she was labouring under all the symptoms of puerperal peritonitis of a low kind; and knowing, from what she had already suffered, that she would not be able to stand general depletion, I ordered a dozen and a half of leeches to be applied to the lower part of the abdomen, the belly to be fomented when they came away, and warm cataplasms to be applied afterwards. She was ordered likewise an ounce of castor-oil. In the afternoon (the same day) I found that the leeches had bled well, but the bowels had not been moved, and that the pain and tympanitic state of the abdomen still continued. She was then ordered a scruple of calomel and a grain and a half of opium; likewise to have an enema of an ounce of castor-oil, and an ounce of oil of turpentine. On visiting her again in the evening, I found her much the same as I left her; the bowels had not been relieved: I therefore ordered her to have the enema repeated, and to take some pills of four grains of calomel and half a grain of opium in each, every three hours. Next morning (the 6th) I found her no better, still complaining of pain in the belly, great tenderness on pressure, and swelling of the abdomen; countenance collapsed; pulse small and quick, about 130 in the minute; great thirst and vomiting; skin hot and dry; lochial discharge continuing but scanty. Ordered her to have some warm oil of tur-

pentine to be rubbed into the abdomen, and to continue the pills.

At 1 p.m. (same day) visited her, in company with my friend, Dr. Kilgour, and found her in the same state as at my last visit, vomiting every thing she took into the stomach. Bowels had not been opened; she was therefore ordered a scruple of calomel and two grains of opium. The turpentine had not been rubbed into the abdomen, neither would she hear of a mustard cataplasm being applied, which was ordered. Towards evening a violent purging set in, and she sunk about 10 p.m. the same night.

Autopsy, 12 hours after death.—On opening the cavity of the abdomen, the usual appearances of puerperal peritonitis were found, but the inflammatory action had been mostly confined to that part of the membrane covering the bladder and uterus. The uterus was the size that it usually is about the fourth month of utero-gestation. The peritoneal membrane covering the anterior and posterior surfaces of it, very much inflamed, and of a deep scarlet colour. Upon making a section, the parietes were found to be about an inch thick, and solid; the inner surface covered with dark blood, and containing small coagula, which, when washed out, presented a mottled red appearance; the fallopian tubes and the broad ligaments presented a dark livid colour; the bladder was of the same appearance, but empty.

REMARKS.—In this case, peritonitis had set in on account of the pressure which the neck of the bladder and parts within the brim of the pelvis had suffered during this short but unusually hard labour; and there is not the smallest doubt, in my mind, that had the perforator been resorted to much earlier in this case than was deemed proper by me, under existing circumstances, the poor woman would likely have been saved a great part of the suffering which she endured during labour, and all that she suffered afterwards, and might have been still spared as a blessing to her family. On account of the liquor amnii being discharged before I saw her, the uterus had acted so violently from the commencement of real labour, that a constant pressure was kept up on the presenting part, which prevented me feeling any fluctuation in the head, although I could feel the bones of the fœtal head very wide apart

from each other, and kept me from defining accurately what was the real cause of delay. The case shews plainly the very great necessity that exists, in all cases where the liquor amnii is discharged early, and where there exists a disproportion either in the capacity of the pelvis through which the child has to pass, or in the increased dimensions of the body which has to pass through, to relieve the soft structures within the pelvis from pressure as speedily as possible, to prevent consequences such as we have detailed in this case.

EXTRACTION OF PORTION OF CATHETER FROM BLADDER.

To the Editor of the Medical Gazette.

SIR,

IN YOUR GAZETTE of June 5, a case is related of extraction of a pencil from the bladder; and several cases are upon record in which pieces of catheter, &c. have been, at different periods from their introduction, successfully removed from the bladder and urethra. The case which I now send you for insertion in your valuable hebdomadal, is chiefly remarkable for the length of time which elapsed before the foreign body was extracted.—I am, sir,

Your obedient servant,
T. C. BUCHANAN.

Gloucester, June 22, 1840.

A. B., æt. 40, valet, was admitted under my care into the Gloucester Infirmary, Nov. 24, 1836. He stated that while he was under treatment for stricture of the urethra in the preceding September, as an elastic gum catheter was being withdrawn, it broke, and about three inches of it were left in the passage, near the bladder. After his admission into the Infirmary he was several times sounded, but no foreign body could be detected in the urethra or bladder; and as the patient was then suffering no inconvenience, he was allowed to leave the hospital Dec. 24, with directions to return immediately the catheter gave him any annoyance.

May 23d, 1837. — The patient returned to the Infirmary, and, on being sounded, a foreign body could be felt in the bladder, producing the sensation that may be supposed to be communicated by a soft substance, surrounded

here and there with calcareous deposition. The bladder was at this time in a state of inflammation, and the urethra exceedingly irritable, so that it was judged more prudent to allay these before any operative procedure was resorted to.

June 19th.—The patient was about to be operated on as for lithotomy, but as the foreign body could not then be felt, the operation was not performed.

27th.—On proceeding to sound the patient, part of the catheter was felt in the prostatic portion of the urethra. The man was now recommended to have the catheter at once removed by operation, but he objected, and earnestly begged to be relieved by other means if possible. The plan of treatment, therefore, consisted in gradually dilating the urethra with bougies, the patient being directed to sit immediately after over warm water, and to retain his urine as long as he could, with the hope that the *vis a tergo* during its evacuation would propel the catheter forward. The urethra, however, was occasionally so obstructed, that the introduction of a small elastic catheter was necessary to draw off his urine till July 29th, when the piece of catheter appeared to have advanced as far as the bulb of the urethra, and the urine could be evacuated by the natural efforts. A small quantity of pus had, for some time, passed daily through the penis, but the man seemed to suffer very little irritation.

Sept. 10th. — Three-quarters of an inch of elastic gum catheter, as large as a No. 6 silver one, rough, and with some of the gummy part removed, were extracted, by passing into the interior a small elastic catheter, and then gradually drawing it forward, an attempt with forceps having previously failed. Another piece of catheter could be felt in the canal, but could not then be extracted, nor till Oct. 15th, when an inch and a half was removed in the following manner:—A small aperture was made at the very extremity of a small elastic catheter; a full-sized stilette was next passed down through the catheter, and made to protrude through the aperture at its extremity; the end of the stilette was then turned up, so as to form a little hook, which was drawn up close to the end of the catheter. The catheter was then introduced down the urethra, into the interior of the impacted piece, and the stilette was gently pushed

on, and moved about, so as to fix its little hook into the side of the impacted portion, and, after a short time, a sufficient hold having been obtained, the piece was drawn out. In the evening another piece, the same length as the former, being the eyed or vesical extremity of the catheter, was also extracted in the same manner. The testicle was swelled for a few days afterwards; but the swelling gradually subsided, and the patient was shortly discharged, completely cured of his strictures, and suffering no injurious consequences from the detention, in his bladder and urethra, of more than three inches of elastic gum catheter, for upwards of twelve months.

CASES ILLUSTRATIVE
OF THE
POISONOUS AND INJURIOUS EFFECTS OF THE HYDRIODATE OF POTASH AND IODIDE OF STARCH.

BY J. ADAIR LAWRIE, M.D.

Surgeon, Glasgow Royal Infirmary; Glasgow Lock Hospital, &c. &c.

I HAVE for some time been aware that the preparations of iodine produce effects on the mucous membranes of the eyes and air passages not hitherto, I believe, noticed. Fatal consequences having in two instances ensued, I think it my duty to make the details public. I shall give the cases in the order in which they occurred in private and hospital practice.

CASE I.—Mr. —, November 1838. Had been for some time under my care for secondary syphilis, affecting the skin, mouth, and throat. Mercury, in various forms and very minute doses, had been tried, but he was so peculiarly susceptible of its influence that I was obliged to lay it aside. I prescribed $2\frac{1}{2}$ grains of the hydriodate of potash daily.

He only took three doses ($7\frac{1}{2}$ grains). The last, which he swallowed immediately before going to bed, left a disagreeable dryness and irritation in his throat. He awoke during the night, with great difficulty of breathing and loss of voice. I saw him early in the morning, with all the symptoms of severe spasmodic croup. Immediate counter-irritation to the throat, warmth, and sulphuric ether with morphia, gave instant relief. The symptoms passed

off in the course of the day, and did not return. This gentleman had never had any similar attacks, and is now in good health. He felt certain that the hydriodate was the cause, and declined continuing it.

CASE II.—Mr. —, January 1839, was under treatment for the sequela of an inflammatory pulmonary attack. I prescribed hydriodate of potash in a form which I very frequently employ.

R Potass. Hydriodat. ʒj.; Infus. Quass. lb. j. solve; S. æger, ʒj. bis in dies.

He had not taken one-half of the mixture in the above dose, when I was sent for to see him during the night. He said he had been suddenly seized with excruciating headache, which he likened to a wedge driven from between his eyes back to the base of his skull; acute pain in his eyes, with the most profuse secretion of tears I ever witnessed, and intense pain in his side, which was swollen, and from which clear serous fluid ran in a continuous stream. I have known this gentleman from his boyhood, and have met with few men of greater courage or power of enduring pain, and I am certain his suffering must have been exquisite. I immediately gave a saline purgative, and applied leeches to the mucous membrane of the nostrils. The leeches bled freely, the relief was almost instantaneous, and next morning the symptoms had disappeared. He was very anxious to continue his "biters," having felt his appetite much increased during their employment, but to this I would not agree. His general health is now good.

CASE III. occurred in the Infirmary. —, admitted into Ward 12, May 10, 1839, for a cancerous ulcer towards the root of the tongue.

11th.—He was ordered ʒj. of the iodide of starch (each drachm containing gr. j. of iodine) morning and mid-day, and eight grains extract of hyoscyamus at bed-time.

16th.—Felt unwell yesterday, without any local ailment, and was directed to take half the quantity of the starch. Early this morning was seized with dyspnœa, which is now very urgent. Countenance sallow and anxious; pulse intermittent on right side of neck, extending downwards from angle of jaw. There is considerable firm circumscribed swelling, apparently not inter-

fering with the larynx or trachea. To this 12 leeches have been applied. On right side of chest percussion is dull, especially posteriorly. Respiratory murmur throughout feeble, and in front there is loud mucous rale. Left side is similarly, but less severely, affected. The medical attendants being in the house at the time, I requested their opinion as to the propriety of tracheotomy. The state of the lungs appeared to them to forbid its employment, and an emetic was recommended, which acted freely, and brought away a considerable quantity of viscid mucus, with relief. In the evening his pulse flagged, and he was ordered wine. At 10 p.m. the dyspnœa increased, and at midnight he died suddenly. The relations obstinately refused to allow his body to be opened.

CASE IV.—Robert Boag, æt. 49, Ward 12, was admitted January 13th, 1840, for phagedæna of the veins; mild measures were tried for some days, but the ulcer continuing to extend was freely and repeatedly cauterized with strong nitric acid, and he was ordered ʒss. of the hydriodate three times daily: the sore immediately improved, the sloughing ceased, and it healed rapidly.

Jan. 8th.—Has taken ʒviiss. of the hydriodate; complains of pain in both eyes, hoarseness, pain in his chest, cough, and slight difficulty of breathing: the eyes exhibit acute conjunctival congestion, submucous infiltration, and contracted pupils; and the characters of the respiration are those of the subacute bronchitis; urine impregnated with iodine: the hydriodate was immediately omitted, the symptoms gradually subsided, and on the 15th he was dismissed cured.

CASE V.—E. L. æt. 30, was admitted into the Lock Hospital, May 22d, 1840, for sinuses after buboes, and secondary ulcers on thighs; she was ordered the infusion of quassia with hydriodate, as for Case Second.

May 31st.—A profuse papular eruption has appeared on face; sores improved.

Omitt. Hydriod.

June 7th.—Soon after last report eruption disappeared, and hydriodate was repeated; eruption almost immediately returned, and is now profuse.

Omitt. Hydriod.

June 8th.—Complains of sore throat,

but no redness or swelling discoverable.

June 9th.—During the night was suddenly seized with acute dyspnoea and hoarseness; pain on pressing trachea, and swelling and pain inside of right submaxillary gland. Pulse full, 103; she was immediately bled to faintness, 12 leeches were applied to larynx, and tartar emetic in full doses given internally. I saw her at eleven forenoon, and immediately determined on opening the trachea, and asked the assistance of Dr. A. Buchanan. On his arrival the symptoms appearing somewhat alleviated, we agreed to delay for an hour or two, and she was left in charge of Mr. Roe, the clerk of the Hospital, with directions to send for me the moment the dyspnoea became in the least aggravated. At three o'clock, about an hour and a half after I had left the hospital, she died almost instantaneously.

Inspection.—The right submaxillary gland was enlarged, with incipient purulent infiltration into the surrounding cellular tissue, especially towards larynx and trachea. The mucous membrane of the upper part of the larynx, rima glottidis, and epiglottis, oedematous. The mucous membrane of the trachea and bronchial tubes generally was nearly natural; the right lung posteriorly was heavy, and acutely congested; the left was similarly, but less severely affected: there was no exudation of lymph from the mucous membrane of the inflamed parts.

There can be no doubt that my first impression, as to the necessity of immediate tracheotomy, was correct, and probably the patient was lost by the delay; at the same time I was not prepared for so very rapid a termination. The patient died within twelve hours from the first accession of the symptoms, and in despite of very active treatment.

I think I am justified in concluding that the above train of symptoms was caused by the iodides; I believe the observations are new; and my colleague, Dr. A. Buchanan, whose papers, in the *MEDICAL GAZETTE* (1836,) bear honourable testimony to the ability with which he has investigated this subject, tells me that he has never met with any such accidents; and I am not aware of any published statements containing similar cases.

Besides these more acute and dangerous effects, I may shortly allude to others, some of which have been frequently observed;—

First, an extremely disagreeable taste in the mouth: this is very frequently complained of, I have myself experienced it: I took the hydriodate some months ago as a tonic; it caused dryness in the throat, and so persistent and unpleasant a taste in the mouth, that I was glad to omit it: the taste continued for many days after the medicine had been given up.

Secondly, cutaneous eruptions. Dr. Buchanan (*MEDICAL GAZETTE*, October 1836,) says, "Dr. Lawrie has remarked that it is only in cases of syphilis that any eruption shews itself under the use of iodine." More extended experience has shewn me that I was wrong in this limitation: I have very frequently met with a papular eruption, where there was no possibility of venereal taint.

Thirdly, intense headache.

CASE VI.—John Carnot, æt. 50, admitted with extensive ulceration of the right hip. Feb. 14th, 1840. Ordered

Potas. Hydriod. ℥j.

15.—Since yesterday (almost immediately after taking medicine) intense headache, and to-day slight salivation and sore throat.

Omitt. Hydriod.

CASE VII.—Mr. J.—Chronic enlargement of right testicle from an injury. Among other remedies I tried gr. v. of the hydriodate twice daily. In two days he complained of severe headache; the dose was reduced to gr. iiss. The headache continued; the medicine was omitted, and the headache immediately left him.

4. Salivation.—This I have met with, but not so frequently as I expected.

From the above cases it would appear that the hydriodate of potash and iodide of starch are dangerous and uncertain medicines. I am, in my own mind, quite satisfied that they were the causes of death in Cases 3d and 5th. Their uncertainty, in a remedial point of view, is even more to be lamented than their danger. If they were unsafe in large doses, and safe in small, or if the disease for which they are exhibited, or the constitution of our patient, had any definite influence on their poisonous effect, they might be used with comparative impunity. As yet, however, I know of no criterion by which we can judge beforehand of their probable effect; that the quantity exhibited is no guide, I am very certain. Case 3d had only taken

one grain of the solid iodine twice daily for five days, when he died, while many of Dr. A. Buchanan's patients take *seventy-two* grains of iodine daily, in the same form, without any bad effects, for days and weeks together. Case 5th took five grains twice daily for a week, when she died; while Wm. M'Symont, æt. 50, Ward 7, with gangrene of the penis, took 3j. daily for eleven days, with apparently great benefit to his disease, and not one of its injurious effects. I have given it in double this dose, and known half an ounce given daily with impunity. I very much regret this danger and uncertainty. I consider hydriodate of potash as by far the best of our recent remedies, and have prescribed it more frequently than any other medicine. In future, however, I shall be more cautious in its employment. Every patient for whom it is prescribed should be frequently seen by his medical attendant, and should be warned to omit it whenever any of its constitutional effects appear. Case 5th teaches us to omit it when the papular eruption is profuse, and not to resume it. Swelling of the neck, hoarseness, and dyspnœa (Cases 3d and 5th), are most dangerous symptoms. For them I believe there is no remedy but tracheotomy, early performed, and on it I would place great reliance. Case 5th teaches us that delay is fatal; and I would not in any future case allow the state of the bronchial mucous membrane to deter me from its performance.

If the above observations are correct, it would further appear that these iodides exert their poisonous influence on the mucous membranes of the air passages, not as direct irritants, but indirectly through the circulation, in the form of acute inflammation. I have never seen them act as irritants to the gastro-intestinal mucous membranes, nor have I ever seen them produce emaciation, atrophy of the mammæ and testicle, hectic, and those other symptoms described by various writers under the name Iodinia.

15, Moore Place, Glasgow,
June 25, 1840.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abrégér.”—D'ALEMBERT.

Odontography, or a Treatise on the Comparative Anatomy of the Teeth; their physiological relations, mode of development, and microscopic structure in the vertebrate Animals. Illustrated by upwards of 159 plates. By RICHARD OWEN, F.R.S., &c. Part I., containing seven sheets of letter-press, and fifty plates, from drawings by Mr. T. Dinkel, and engraved by Mr. L. Aldous. Baillière, 1840.

[2d Article.]

WE cannot but congratulate our readers and ourselves, on the various excellent results which are likely to flow from our late review of the “*Odontography*” of Mr. Owen. No sooner had that gentleman perused it, than he indites a very peremptory epistle to Professor Phillips, the Secretary of the British Association, of which the object appears to be, to put a stop for ever to the practice of modifying, either by addition or omission, the reports of papers read at the British Association. As Mr. Owen's good will and pleasure are here in perfect accordance with right and justice, we sincerely hope that they will be implicitly obeyed. We were not previously aware that such an abuse existed, and Mr. Owen has certainly the incontestable merit of having first called public attention to it. Mr. Nasmyth, however, in his letter of last week, has shown the evil to be so glaring, and so evidently unjust in its consequences, that we can scarcely consider any terms in which it is censured and denounced as too violent. We therefore second his appeal with all our heart, and wish him every success in his laudable exertions to remedy abuses, which certainly no person is more capable of pointing out, and of tracing back to their motives. We look forward with confident pleasure to the appearance of a new edition of the Archives of the Association, to be published under the auspices of Professor Owen. Doubtless, as he has been pleased to request Mr. Phillips to restore, in Mr. Nasmyth's abstracts, certain passages from the report of the Literary Gazette, which it suits him to

presume have been omitted with a fraudulent intention, he will not merely request, but peremptorily enjoin that gentleman to strike out of the abstract of a paper of his, entitled "On the Structure of the Teeth, and the Resemblance of Ivory to Bone," &c., read in August, 1838, certain passages which are not only wanting in the reports published in the weekly journals at the time, but which actually could not have been written until more than six months after they are represented as having been read!!

Such a revision of the Transactions, however, would not in the slightest degree affect the charge which, in our article on his Odontography, we brought against Mr. Owen. There is no necessity, whatever, for our flying to the "Transactions" for evidence against him. In a letter published last week in this journal, we observe that Mr. Nasmyth claims some allowance for the inaccuracies which unavoidably creep into reports of the papers read at the British Association, made so hastily and under such disadvantageous circumstances, as those in the Literary Gazette and Athenæum: we think that there was no need for him to have done this; at any rate we have compared the corrected edition of his paper in the "Transactions" with the uncorrected one in the weekly journals, and find that there is really no essential difference between them, with respect to the matter they contain; in point of form, we need not say, that Mr. Nasmyth has taken care that his own report should be more correct, definite, and concise, than the others. We shall therefore proceed, with merely the Literary Gazette and Athenæum in our hand, to repel all Mr. Owen's insinuations; to confirm, indisputably we think, the charge we did not at first bring against him, without due consideration of all the bearings of the question, and we shall, at the same time, adduce fresh evidence, which is equally, if not more conclusive, than that which we have already published. Our readers will thus perceive, that Mr. Owen's letter to his secretary, to put a stop to proceedings which in this case had never commenced, as well as a considerable part of his address to ourselves (in which he is at the pains of imagining a case that does not exist), have no reference to the point at issue, and would, indeed, be utterly superfluous and fruitless, were it not

that they may possibly contribute to the suppression of the odious practice of interpolation, which was so flagitiously carried on in 1839. However, leaving Professor Owen to prosecute this interesting subject, we proceed at once to address ourselves to the immediate question.

In reply to our review, Mr. Owen comes forward with a bold face, and says that he, on the 16th of December of last year, was the first physiologist to teach that the ivory of the tooth is formed by the transition of the pulp into an ossified state, and not by the simple secretion of ossific matter on the surface of the pulp—the old theory of the process, which previous physiologists, including, he says, Mr. Nasmyth, had adopted. This new light, according to Mr. Owen, first shone upon the French Institute on the 16th of December last, from a memoir of his entitled "*Recherches sur la structure et la formation des dents des squaloides, et application des faits observés à une nouvelle théorie du développement des dents.*" Now let us see how these assertions square with the tenour and details of the reports of Mr. Nasmyth's papers, published three months previously, viz. on September 15th and 21st, 1839. Mr. Owen's whole position rests upon the assumption that Mr. Nasmyth believes the ivory to be formed by ossific secretion from, and not by an ossific transformation of, the pulp. Now what say the following passages?

"Mr. N. next proceeded to inquire *how the transition into ivory is effected?*" (Lit. Gaz. No. 1183, p. 597.) "A comparison between the superincumbent perfect ivory and the formative surface of the pulp beneath is always easy, because portions of the former at an early stage, at any rate, remain adherent to the latter, and fragments of the dental bone are strewn over it, more especially in human teeth. The cellular conformation of these fragments is always evident; and in size and appearance they are perfectly accordant with the *cellules of the pulp.*" (Lit. Gaz. p. 598.) It will scarcely be believed that Mr. Owen, who complains so dolorously of mutilated and unfair quotations, should actually have cited a part of the above passage, viz. as far as the semicolon, as a complete statement, and as shewing that Mr. Nasmyth main-

tains that the ivory is secreted on the surface of the pulp, instead of being constituted by ossific matter deposited in its cells, which the conclusion of the sentence proves to be Mr. N.'s opinion. We quite agree with Mr. Owen that such tricks are indeed stale, and ought to be discarded from all legitimate controversy. By the formative surface of the pulp, Mr. Nasmyth evidently does not mean a surface from which a mass of ossific matter exudes, or he would not go on to say that the cells of the ivory correspond in size and appearance with the cells of the pulp: he means that the surface of the pulp undergoes a certain change previous to the formation of ivory by the deposition of ossific matter in its cells; and this change, which he has elsewhere fully described, he distinguishes as formative. Mr. Owen transmits his order to Professor Phillips, to see whether the word "formative," occurring in the report in the Literary Gazette, is retained in the abstract, presuming, of course, that it is omitted. We beg to inform him, that on turning to page 9 of Mr. Nasmyth's abstract, he will find a distinct description of "the formative surface of the pulp."

To proceed further with our evidence that Mr. Owen's memoir of Dec. 16th is not, as he would have us believe, the first announcement of the "*nouvelle theorie*" that the ivory is formed by the transition of the pulp to an ossified state. At page 598 of the Literary Gazette for September 21, we find Mr. Nasmyth stating that, at an early stage of ossification, "*the different layers of cells will be seen, and the transition into ivory may be observed.*" A little further on he observes, that "*the manner in which the osseous matter is deposited in the cells of the interfibrous substance, he had not been able to discover.*" In the Athenæum for Sept. 14, 1839, p. 707, Mr. N. says, "*The cellules of the fragments of the ivory, which are found scattered on the pulp, resemble exactly in size and appearance the cellules of the latter when in a state of transition.*"

Surely we need proceed no further. We must by this time have satisfied every candid and impartial mind. Mr. Owen may carp at the phrase "formative surface"—may make objections to the terms "deposition" and "layer," &c.—may try to prove again and again

to Professor Phillips the necessity for the restitution or omission of this or the other expression, but he will never succeed in convincing a single rational being that Mr. Nasmyth, in the papers from which we have quoted above, teaches the old doctrine of secretion or exudation of the ivory from the bulb, in contra-distinction to Mr. Owen's pretended "*nouvelle theorie*" that the ivory is formed by the transition of the pulp to an ossified state. As we have commenced the chain of evidence, however, we will not omit any of the links, though all may not be absolutely necessary to our argument. Not only has Mr. Nasmyth, as the above quotations shew, argued the transition of the cells of the pulp into the cells of the ivory, but he has done the same with respect to the fibres. It appeared to him, he says, that the fibres of the ivory are nothing else but the frame-work of the reticulations (which he has described as being presented by the surface of the pulp in its formative or transitive condition): at any rate, he continues, "*The diameter of these fibres of the reticulations is precisely that of the fibres of the ivory. The fibres of the ivory are frequently very spirally curved, like those of the pulp.*" (Lit. Gaz. p. 598.) Do not all these observations tend to establish the theory of transition? Can they by any ordinary distortion be interpreted in favour of a doctrine the very opposite to that of transition? Is Mr. Nasmyth to be rudely dragged before Professor Phillips, and made to do penance at the instance of the great ante-interpolator, Owen, for having dared to insert in his abstract that the ivory is neither more nor less than the ossified pulp? We confidently leave these questions to be answered by any one who has devoted half an hour to the perusal of the reports of Mr. Nasmyth's papers.

Mr. Owen asserts that all Mr. N.'s observations go to confirm previous researches—to support the old view of the formation of the ivory. If Mr. Nasmyth, who, as the author of these observations, ought, with all due deference to Mr. O., to have some knowledge of their bearing and tendency, is to be credited, they are to be viewed in an exactly opposite light. In the Literary Gazette for Sept. 21, p. 598, we find the following passages:—"He allowed that these views

of the formation and structure of the teeth are both *bold* and *novel*. He fully recognized and respected the authorities ranged in support of *very different* theories, though he still ventured to think that, were not his limits confined, he could easily show how what he held to be fallacies and incongruities have arisen." We are afraid this cannot but tell against the novelty of Mr. Owen's "theorie" of the 16th of December.

No statement, however cautiously and leisurely drawn up, of recent complex microscopical investigations, in a most delicate and difficult department of anatomy, can be rendered proof against all cavils and quibbles, especially when started by a gentleman so versed in "physiological subtleties" as Mr. Owen, and followed out on one single point through an epistle of eleven columns of letter-press. How much more exposed to them, therefore, must be reports drawn up like those of the *Literary Gazette*! But it is extremely remarkable, and Mr. Nasmyth ought to esteem himself very fortunate in his reporter, that even in that journal, Mr. Owen can only fix upon one passage on which, by the aid of unfair juxtaposition (a practice stale at the commencement of his letter, but, as we shall show, very sweet before he reaches the end), to found, with any plausibility, the charge of inconsistency against Mr. Nasmyth. And even in this case, the discrepancy he has so exultingly detected is merely apparent—it is in the style and not in the matter—and will be dissipated by a simple explanation, as completely as all the other counts in Mr. Owen's charge have already melted into air. The tenour of Mr. Nasmyth's views has been sufficiently shown in the extracts given above. The theory of transition is expressed or implied throughout the whole paper. When, therefore, towards the end, the reporter says, "Schwann regards the dental substance as the ossified pulp, whilst Mr. Nasmyth's observations lead him to conclude that the cells of the ivory are altogether a distinct formation"—the natural inference is, that he refers to some peculiar theory of Schwann, from which Mr. N. differs. And this, though Mr. Owen finds it convenient to omit all mention of it, was actually the case. "Schwann acknowledges," Mr. N. goes on to say, "that he is ignorant of the

process of transition, and he regards *the dental pulp as a simple cartilage*." This Mr. Nasmyth denies; he does not believe, with Schwann, that the pulp is converted into ivory in the same way that cartilage is converted into bone; to the view of its ossification, therefore, in Schwann's sense of the word, he is altogether opposed, believing that a distinct formative process takes place at the surface of the pulp prior to the conversion of its cells into the cells of ivory. In the report published in the *Athenæum*, which was furnished, it appears, by Mr. N. himself (see his letter of last week), we find the following notice of this subject:—"Mr. Nasmyth concluded his paper by a notice of Schwann's work on the cellular character of primary tissues, dwelling on his views of the cellular organization of the pulp, from which his own were essentially different."

Indeed, the attempt to deduce from this isolated and misquoted phrase of the reporter of the *Literary Gazette*, on a controversial point, in opposition to the whole tenour of Mr. N.'s paper, that that gentleman is in favour of the old view of the formation of the ivory by exudation, is the very height of absurdity, or at any rate, to use Mr. Owen's own words, of "physiological subtlety." We cannot tax the patience of our readers by discussing whether the reporter would have been more correct in making Mr. Nasmyth speak of the deposition of ossific matter in the cells of the surface rather than on the surface of the pulp, for having already quoted sufficiently from the report of Mr. Nasmyth's paper to convince every right-minded person of its real spirit and tendency, we shall leave this, the last mighty matter of detail which Mr. Owen has touched upon, to be discussed in another letter from him to the Secretary of the Association.

There are phrases in Mr. Owen's letter, from which we might infer that he is in favour of the old doctrine of dentification with quite as much justice as he has made that assertion with regard to Mr. Nasmyth: for instance, he says that his observations were a "subversion of the prevalent doctrine that the ossific matter of the tooth was deposited in thin layers on the surface of the pulp, a doctrine based upon *the well-known facility with which these layers can be detached*." (*MED. GAZ.* No. 655, p. 504.) At

p. 784 of the *Comptes Rendus*, also, he speaks of "la facilité avec laquelle on peut separer du bulbe sous-jacent la portion de la dent déjà solidifiée." From both these passages, when isolated, it might be inferred that Mr. Owen was opposed to the theory of transition: at all events, the subject has not been attentively investigated till of late, and hence is not so easily described as matters of ordinary anatomical investigation; it is, moreover, surrounded by no common difficulties, and Mr. Owen should have borne this in mind, and made allowance accordingly, instead of dilating on apparent contradictions of the reporter to the *Literary Gazette*; mutilating some of his passages, and attempting to pervert the sense of the whole report.

The researches of Mr. Nasmyth on the structure of the teeth have evidently been much more extensive and various than those of Mr. Owen, whose ignorance of some parts of the subject is such as to create no little astonishment; for instance, he confounds the well-known cells or corpuscles of the teeth, described by Retzius, with the peculiar cellular structure of the interfibrous substance, as described by Mr. Nasmyth: *but they are totally distinct from each other*, as every reader of the reports of Mr. N.'s papers in the *Lit. Gazette* and *Athenæum* will at once perceive. Hence, Mr. Owen's officious observation to Prof. Phillips (*MED. GAZ.* p. 505, note,) that Mr. Nasmyth's account of the discovery of the cellular structure of the interfibrous substance of the ivory should be omitted in the *Transactions*, in justice to Retzius, who singularly enough has never especially referred to the interfibrous substance at all, is neither more nor less than ridiculous. We advise Mr. Owen, who pounces so predatorially upon Mr. Nasmyth's papers, cutting away some parts, claiming the lion's share for himself, and offering a portion of the booty to Retzius, to wait until the Swedish Professor asks him for what belongs neither to one nor the other—a claim to a discovery which we are sure Retzius would be ashamed to make, though Mr. Owen would evidently be too happy to award it to him.

By no means can we excuse Mr. Owen's silence respecting Mr. N.'s researches, in his communication to the French Institute: even supposing the reports in the *Literary Gazette*

and *Athenæum* to have been not altogether clear to him, there was evidently sufficient allusion in them to the theory of transition, to demand a notice of them in a communication which was devoted to the propounding of a theory on that subject. And Mr. Owen's conduct, we think, admits still less of palliation, when it is recollected that he is an officer of the College of which Mr. Nasmyth is a member, and one of the Council of the British Association, of which Mr. N. is a fellow; and therefore should have been particularly careful not to pass over himself the claims to which that gentleman's "able" researches (for thus Mr. Owen has himself characterized them) had so justly entitled him. The truth is, however, that Mr. N.'s papers contain a mass of facts, the fruits of actual, careful, and extensive investigation, which, as they are both new, and established on indisputable evidence, cannot be diminished in value by the progress of time, whatever additional light may hereafter be thrown on the subject, and however it may suit the publishers of new theories to pass them over in silence.

It is in vain for Mr. Owen to deny the analogy which exists between many parts of his *Memoir* of December 16th, and the report of Mr. Nasmyth's paper, published September 21st; an analogy which cannot fail to strike even the most cursory reader. Let us, for instance, compare their respective microscopic observations on the structure of the pulp. "The unossified pulp," says Mr. Owen, in the *Comptes Rendus* for December 16th, "when examined under a strong magnifying power, consists of semiopaque polyhedral granules, or cells, suspended in a clear matrix, and the whole is enclosed in a tough transparent membrane which forms the outer surface of the pulp."

"On examining the internal structure of the pulp generally," says Mr. Nasmyth, in the *Literary Gazette* for Sept 25th, "the number of minute cells presenting themselves in a vesicular form is very remarkable; they constitute, indeed, the principal portion of its bulk. Those vesicles vary in size, from the smallest perceptible microscopic appearance, probably the ten-thousandth part of an inch in diameter to one-eighth of an inch, and are evidently disposed in different layers throughout

the body of the pulp." The outer surface of the pulp Mr. N. has more minutely described, as presenting a reticular character. We think that it would have been much better for Mr. Owen to have stated that he was ignorant of Mr. Nasmyth's previous researches, as he has done of Schwann's, than to have had recourse to his present defence.

As we have here mentioned the name of Schwann, we must observe, that, in his *Odontography*, Mr. Owen states, that at the time of the publication of that work, he was in ignorance of Schwann's researches on the development of the teeth; but he places himself in a very awkward dilemma by such a statement, inasmuch as Mr. Nasmyth, in one of his papers read at Birmingham, gave a full account of Schwann's labours on this subject, as is mentioned in both the *Literary Gazette* and *Athenæum*. In the former journal the account is reported at great length.

In conclusion, we beg leave to tender a word of advice to Mr. Owen, suggested by the manner in which he has approached, and seems inclined to carry on, this discussion. As if conscious of the weakness of his cause, he resorts at once to angry words, and such reckless abuse, as no prudent controversialist, much less a man strong in the consciousness of truth and in the justice of his position, would ever have recourse to. Instead of at once meeting the charge brought against him, he, in a great measure, diverts the attention of the reader from the real point at issue, by writing a long desultory letter to Prof. Phillips, on a subject, which, as we have shewn, has really nothing to do with the question; by bringing accusations against Mr. Nasmyth, all of which are groundless, and one of which not only misses its aim, but recoils with concentrated force on its author; whilst another (we allude to the pretended injustice to Retzius) would certainly cover him with shame for the ignorance of the subject on which alone it can have been founded, were it not that the multifarious nature of his pursuits may, in some degree, be pleaded as an excuse for his inaccuracies in a department of anatomy to which he can only have devoted a part of his attention, and for a very limited time. His influence and his reputation are both summoned to aid him in the struggle:

he omits none of the offensive and defensive manœuvres of unscrupulous literary warfare; and we see him resolved, if possible, to crush his adversary at all hazards, in order that a salutary warning may be held out to any one who may hereafter be tempted to thwart him in his career. To facilitate his escape from well-merited reproaches, he represents himself as an injured and long-suffering individual; he complains bitterly of stale juxtaposition and mutilation, and practises both in the most unscrupulous manner himself. Nay, he does more. Great as is his reputation, lofty as is his position, he does not hesitate to descend to making false quotations, in order to give an air of greater plausibility to his defence. At p. 507 of the last week's number of this journal, he manufactures what he is pleased to call Mr. Nasmyth's *emphatic statement* of September 1839, "that so far from being the ossified pulp, it (the dental substance) was altogether a distinct formation." In making this fabrication, he appears to have been assisted by a friend; and in order to give it greater weight, he takes the trouble to inform us that the character of that friend "is the very antipodes of impudence and duplicity." Now of this passage, which he gives as quoted from the *Literary Gazette*, p. 598, only the *last four words* will be found, on reference to that journal, to be correctly copied: *all the first part of the passage is the composition of Mr. Owen*. Mr. Nasmyth, by this perversion of his report, is made to say that the dental substance is altogether a distinct formation; whereas he never mentions the dental substance at all, and his real meaning evidently is, as we have shewn above, that the cells of the ivory have undergone a distinct formative process in their transition from the cells of the pulp. Such unfair and unworthy tactics must inevitably defeat the purpose for which they were adopted. Mr. Owen's unscrupulous violence, far from concealing, as he seems to calculate it may do, the weakness of his arguments, will only still further damage his cause in the eyes of every dispassionate reader.

MEDICAL GAZETTE.

Friday, July 3, 1840.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
 publicum sit, dicendi periculum non recusio."

CICERO.

MEDICAL REFORM IN IRELAND.

Our readers are aware, that on the perplexing subject of medical reform, we have always endeavoured to keep the just medium between the eager innovator and the sluggish conservative. The former imagines that evils inherent in human nature, or, at any rate, firmly entwined with the very frame-work of society, can be suddenly removed by a mere legislative enactment; the latter cries out, "whatever is, is right!" and would shrink from correcting the most notorious abuses, till reform comes, as Lord Chatham said, "with a vengeance, from without."

It is thus that while we look with a natural distrust on the non-faculty scheme of our English agitators, we commend the improved examinations of our medical corporate bodies; and it will not be too bold to claim our share in the great and indispensable reform which took place in the College of Physicians. Our Irish brethren, however, have grown impatient at these slow improvements; and, disdaining a bit-by-bit reform, aspire at once to a medical millennium.

It is now rather more than twelve months since we gave an account of the first assembling of the Medical Association of Ireland. Their first anniversary took place on the 27th of May. As on the former occasion, Mr. Carmichael's speech was the first and best of the day.

The people, said this eminent surgeon, have not yet come forward to petition parliament in favour of medical reform; yet it is their interest to do so, because

many men who call themselves physicians and surgeons are incompetent to the performance of their duties. Meantime, there are eighteen chartered corporations or colleges in the United Kingdom, empowered to grant licenses to practise; and these, instead of trying to encourage a maximum of knowledge in their candidates, try only to obtain a maximum of diploma fees for themselves; or, in the words of the ingenious President of the meeting, "exert a miserable rivalry, only in the accumulation of money." This would be a sad case, indeed, if true, as they say in America. We should almost despair of the reform of a profession whose leading members in the several corners of the British islands vied with each other only in opening the portals of their colleges on the easiest terms—where Aberdeen and Edinburgh, Oxford and Cambridge, London and Dublin, had no emulation save in the cheapness of their respective *asyla ignorantie*! "Come here," cries one, "and for ten pounds we will excuse you all the refinements of anatomy." "Nay," interrupts another, "*we* allow you to transpose the liver, like the imaginary doctor in the *Médecin malgré lui*, for the small charge of nine guineas."

The only example, however, of an examination lowered to meet the public demands, which is given by Mr. Carmichael, is that of the Irish College of Surgeons. It "maintained for many years a high character for the rigour of its examinations, which caused its diploma to be every where respected. But of late years it has been induced to swerve from the high tone it had adopted, and lower its examination to the level of the Colleges, otherwise it would have scarcely a candidate for its diploma—*Ab uno disce omnes*. (Hear, hear.)"

Never was a quotation more inappropriate, or a "hear, hear!" more indis-

criminative; for whatever the Irish College of Surgeons may have done, increase of severity, not of leniency, has been the general characteristic of the changes made of late years in medical examinations. We wonder that so sharp a man as Mr. Carmichael should not have heard what has been done by the University of Cambridge, and our London Corporations, the College of Physicians, the College of Surgeons, and the Society of Apothecaries. These are among the eighteen licensing bodies he speaks of, and they have all either lengthened the course of study required from their candidates, or made the examination more strict, or effected both these reforms. The University of London, too, is far from forming one at the Dutch auction imagined by Mr. Carmichael, where the eighteen licensing bodies contend to sell their honours to the lowest bidders in point of qualifications. In fact, we believe that several bodies besides those we mentioned, have raised their qualification, and we doubt if any one but the Irish College of Surgeons has lowered it.

Nevertheless, we are ready to admit that many of the eighteen bodies might raise their standard with advantage; and it is possible that some minor seats of knowledge still hanker after doctorial fees, and are unwilling to drive customers away.

Mr. Carmichael's remedy is to have only three licensing bodies, one in each of our three capitals, and to raise the standard of qualification to so high a pitch, as to thin the ranks of the profession. This would be pleasant enough for most of us, but what would be its effects on society? It does not require much foresight to be convinced that it would be an irresistible premium on amateur practice of all kinds; bonesetters, Lady Bountifuls, village wisemen, and uns graduated in Buchan's Domestic Medicine, would all walk an inch the

higher for it. It would be a partial return to the sixteenth century.

The plain truth is, that although we have an over-abundance of medical practitioners, if we measure their superfluity by their remuneration, we have scarcely one too many, if we regard merely the wants of the public. Even in this island there are numerous districts where there is no practitioner within a reasonable distance. Thus in South Wales it often happens that the nearest practitioner is fifteen miles distant; and "old women, or other uneducated persons who are supposed to possess skill, are usually employed in the most tedious cases of fever, &c."*

Nor is it necessary to go as far as Wales to witness a lack of medical advice. In Dr. Skrimshire's work on popular medicine, on which we commented about two years ago,† and which is addressed to his son, a clergyman in the Isle of Ely, he tells him that as he is situated in a populous village, some miles from a medical practitioner, he may expect to be frequently summoned to cases of accident or sudden illness, to consult with the friends of the sufferers, &c. So that even within seventy miles of London it may be usual to consult a gentleman whose knowledge of medicine is derived from a single duodecimo volume!

In Kilkenny, again, as we learn from Dr. Cane's speech at the meeting, there are no less than twenty practising quacks; these are "ignorant, pretending men — regular bone-setters, who earned from £50 to £100 a year each, by practising medicine, though there were many of them who did not know how to read. A great many of the surgical operations of the country are performed by these men," &c.

Now, the expectation is afloat that

* Extract from Mr. Edward Senior's report, in the report of the Poor Law Commissioners, 1840.
† Medical Gazette, August, 1838.

under the new and faultless system the profession and the legislature combined will be able to banish these interloping bone-setters, and also diminish the tale of regular practitioners. Vain hope! for as soon as the supply of surgeons is unequal to the demand, so soon will Kilkenny be invaded by another horde of cheap unlicensed operators. In other words, a fresh tax on the article will be an encouragement to smuggling.

So that here is obviously a social dilemma to be cleared up, not evaded. The medical practitioners of this and other countries are too numerous to be tolerably rewarded, but not too numerous to be employed; the profession would wish its ranks to be thinned, and its recompense increased, but then the battalions of rustic bone-setters will multiply. If, on the other hand, the present unbridled competition continues, medical fees will be lowered to the wages of day-labour.

The qualifications of medical candidates may be safely raised, with advantage both to the public and to practitioners; but it is impossible that this can be done so suddenly and severely as to make any perceptible difference for years to come in the serried ranks of our profession. Thus we agree with Mr. Carmichael, when he suggests that when the examination is on anatomy, a body should be placed before the candidate, and a knife put into his hand, and he should be desired to demonstrate such parts as his examiner may select; and a similar method might be pursued with chemistry and botany.

Another improvement suggested by Mr. Carmichael is the separation of the apothecary from the physician; in other words, he proposes that the prescriber shall not sell the drugs which he orders. This limitation is no doubt advisable; but the creeping in of the contrary custom in Ireland, in the present age, as in England 150 years ago,

is a proof that cheapness is imperiously demanded by the community. Mr. Carmichael says that the apothecary, having ninety-nine times out of a hundred the first possession of the patient, and professing to be as clever as the physician or surgeon, will keep the case; "assumptions like those, on the one hand, and *mistaken notions of economy* on the other, will keep the regularly educated physician and surgeon out of practice," &c. So that, after all, it is a question of economy, or, at any rate, of saving in the first outlay, which is shelving the physicians of Ireland in 1840, as it did those of England in 1690. Mr. Carmichael, indeed, says that the practitioner of five years' standing will not expect to be paid like one of ten years', nor he again like one of twenty; but, we would ask, are the physicians of Ireland ready to take crown fees? with them they are saved; without them they must prepare to follow their brethren in the ruling island.

Mr. Carmichael observes, too, that this mixed practice brings in its train an excess of physic; it "has induced a habit of inordinate dosing;" so that on the continent we are called the physic-taking English.

It is from this superfluity of drugging, he adds, that the homœopathists have perhaps acquired more character in the British dominions than elsewhere. The patient, overwhelmed by kilderkins of white and black draughts, gets well by "*Belladonna, x.*," *i. e.* by taking no medicine at all.

A celebrated practitioner, at a watering place in England, owes his renown to the same judicious plan, according to Mr. Carmichael. "Patients, in general, go to him fairly run by the quantity of medicine they have taken; he prescribes early rising, an early dinner on one plain meat," &c. In short, the patient gets well, the doctor rich and famous. There is some exaggerative

humour in this picture; yet it is doubtlessly founded on facts, and the physician deserves his praise. For though a patient "run down" by medicine will often be benefited by simply omitting all his drugs, yet this resource does not instinctively occur to every one, though, like Columbus's balancing of the egg, it is the easiest of all things when it has been shown.

Our Irish brethren have certainly the advantage of us in the constitution of their assembly. The presidency of Mr. Carmichael has given it a vigour and a vivacity not to be found in the British Medical Association; and the delegates from so many parts of Ireland bestow upon it, in some measure, the complexion of a national convention.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

June 23, 1840.

SIR B. C. BRODIE, BART., IN THE CHAIR.

A Case of Fractured Spine treated by Extension.

By HINCHMAN CROWFOOT, Esq. of Beccles.

THE patient was a coachman, and received the injury by driving a carriage under a gateway obstructed by a beam, by which he was bent almost double. The spinous processes of the 9th and 10th dorsal vertebrae were found, on examination, to be separated from each other much beyond their usual distance, the 9th being apparently forced forwards, whilst the 10th projected backwards. The bladder was paralysed, and there was a total loss of the power of voluntary motion in the lower limbs, with an equally complete abrogation of sensibility. Unwilling to leave the patient to his fate without some decided attempt to relieve him, the author resorted to the use of extension by means of pulleys, by which the deformity of the spinal column was evidently diminished, with the restoration, at the same time, of a small degree of sensibility. Voluntary power, however, was not at all restored. The most active antiphlogistic measures were afterwards pursued for a very considerable time, with the result that, in about eleven months from the accident, the patient was restored to the power of resuming his duty as a coachman.

The author considers the final recovery of the patient to have been chiefly due to the steadily-continued efforts to prevent or subdue inflammatory action in the injured parts.

A Case of Tumor in the Pelvis, impeding Parturition. By J. C. W. LEVER, Esq. Communicated by Dr. MERRIMAN, by whom a Postscript is appended.

The patient who was the subject of the affection here described had been many hours in labour when Mr. Lever was called to see her. Finding a tumor as large as a foetal head occupying the middle of the pelvic cavity, and obstructing the progress of the labour, the author punctured it with a lancet, and gave exit to upwards of a pint of an oily fluid, when the tumor collapsed. The pains continuing, the head of the child rapidly advanced, and birth was effected in two hours from the operation. The case here related bears a close resemblance to some of those described by Dr. Merriman in the tenth volume of the Society's Transactions.

A Third Memoir on some Principles of Pathology in the Nervous System. By DR. MARSHALL HALL.

The first of these memoirs was entitled, "On the Condition of the Irritability of the Muscular Fibre in Paralytic Limbs;" the second, "On the Reflex and Retrograde Actions of the Spinal Marrow."

The present memoir treats of "the Influence of Volition, of Emotion, and of the Vis Nervosa," and completes the account of the sources of emotion as exhibited in the various diseases of the nervous system.

An attack of complete hemiplegia leaves the limbs of the paralysed side, but especially the arm, deprived of voluntary motion; the patient generally carrying that arm, the rest of his days, in a sling. Immoveable by volition, however, the arm is moved energetically on any occasion of emotion—any hurry, alarm, surprise, &c. The source, the seat of volition, is cut off from the affected limb; that of emotion still remains in connection with it: these are therefore different, and it seems probable that that of the former is placed higher up than that of the latter; the two occupying the *cerebrum* of the *medulla oblongata* respectively. But besides the occasional effect of emotion, there is a constant influence of the *vis nervosa*, seated in the spinal marrow, inducing contraction of the fingers and of the wrist of the hemiplegic hand and arm.

These are facts of clinical observation, valuable as facts, and in their relation both to physiology and pathology. Who does not now see the distinction, for ex-

ample, between volition, emotion, and the *vis nervosa*, as sources of muscular motion?

In fact, an attack of decided hemiplegia, severs and dissects, as it were, the cerebral from the true spinal system. The morbid and deleterious effects of emotion, in the latter case, is emphatically set forth; the author affirming that the intrusion of visitors, &c. is frequently the cause of a fatal termination, which might probably have been averted by seclusion in a still dark room, free from the visits of strangers.

The author proceeds to speak of the effects of emotion in cases of stammering, of chorea, of paralysis agitans, &c.; and goes on so far as to suggest that the two former might scarcely manifest themselves if all emotion were excluded. They subside during quiet sleep, to return on the occurrence of dreams or waking. How are these facts to be explained, except on the principle of the removal and re-admitted influence of emotion? It is well known, on the other hand, how emotion aggravates these diseases at other times.

An interesting case is briefly detailed, and illustrated by a drawing, of a patient who could seize and hold a pen by a strong and sustained effort of volition; but when this effect subsided, the pen was drawn into various positions by the involuntary and irregular agency of the *vis nervosa*.

The paper concludes by a brief reference to the influence of *shock* on the nervous system. In the first attack of hemiplegia, the paralytic muscles manifest less irritability than those of the opposite side: a state the very contrary of what is observed in the sequel: *immediately after* the accident by which the spinal marrow is injured, the reflex actions afterwards observed are absent. In some experiments on the circulation of the blood in frogs, if, when the brain and spinal marrow were entirely removed, the circulation still continuing in the web, one foot was suddenly crushed, the circulation instantly ceased in the other. Lastly, a blow on the tibia induces immediate, though momentary, paralysis of the leg. These are examples of the influence of shock, and obviously afford subject for investigation.

ASSOCIATION OF PHYSICIANS,

Dublin, June 1st, 1840.

THE PRESIDENT, DR. ROBERT COLLINS,
IN THE CHAIR.

— —

A note on diseases of the Aortic Valves.

DR. OSBORNE said—Although much has been done towards the elucidation of the pathology and symptoms of the diseases of the heart, yet the subject is far from exhausted. I more willingly offer a small

contribution, although so many from the ranks of the profession in Dublin have made splendid additions, inasmuch as I have followed a different course from theirs, in seeking for symptoms independently of the sounds of the heart; and, also, in applying some geometrical principles to the measurement of the diseased valves.

According to my observations, bounding of the smaller and of the larger arteries are two very different things, occurring under different conditions, and dependent on different causes: bounding of the smaller arteries, as is well seen in the radial artery, is to be observed in most persons in hot weather, or after taking any unusual exercise, and in many is evident at all times, without any such excitement, and without any motion whatever in the larger arteries. The obvious explanation of this phenomenon is, that the wave of blood sent from the heart proceeds onward through the canal, until it arrives at its smaller extremity, where the obstacle presented causes it to impinge on the sides of the vessel, and thus to produce a bounding: whether this explanation be correct or otherwise, the fact is, that this bounding of the radial and other arteries, equally distant from the heart, occurs in perfect health, and (as I have ascertained) may be produced in the majority by using violent exercise, or by external heat. The bounding of the larger arteries, as the brachial, occurs as a permanent symptom only in an open state of the aortic valves. As some doubt appears still to exist as to the connection between bounding of the arteries and imperfection of the aortic valves, I shall here briefly state the facts, which seem to me to establish it, with regard to the larger arteries: first, whenever I had the opportunity of thoroughly examining cases of bounding of large arteries during life, there were found in all indicative of hypertrophy of the heart, in a greater or lesser degree; in fact, by feeling the pulse alone, I am now accustomed to predict those cases in which the bounding of the brachial artery will be found. Secondly, in all cases in which I have the opportunity of examining such cases after death, I find the aortic valves more or less diseased. Thirdly, this bounding, although most frequent in the decline of life, yet is not necessarily a consequence of the changes in the cellular structure, or in the loss of fat surrounding the artery, incident thereto, because in some old persons the arteries, although deserted by the fat, and rendered superficial, yet exhibit no bounding whatever. Fourth, bounding of the larger, as the brachial artery, cannot be produced by exercise in an individual in whom it does not previously exist in some degree, although when so existing it may be greatly increased; and,

fifth, when we instantly compress the upper part of the artery after each pulsation, the lower portion will retain its position, and bounding will be effectually prevented. This experiment requires some practice and dexterity, but deserves to be called an *experimentum crucis*, the result of it being susceptible of only one explanation—that by making the finger perform the office of a valve, and so preventing the passage of the blood backwards towards the heart, the bounding is prevented, and that regurgitation alone is the cause of the bounding. When the same experiment is performed, with reference to the bounding exclusively confined to the smaller arteries, it does not stop the bounding; and hence it follows that it must depend on a different cause.

This necessary connection between bounding of the large arteries, and an open state of the aortic valves, has not been generally admitted, in consequence of the numerous cases in which the valves are reported healthy, although bounding existed during life. That those reports of healthy valves arose from want of sufficient care in their examination, I had been long convinced. To some it appears sufficient to see if there are ossific deposits; to others, to pour water down the artery, and if they can hold it in such a position as to prevent the water from running out, the valves are pronounced healthy, and fit for the performance of their functions; others feel them with their fingers, and if no bony hardness is perceived, they are pronounced all right. I therefore think it useful to enumerate the diseases of those valves which have actually been observed; secondly, some which have not been observed; and, thirdly, to offer an explanation of those cases in which bounding of the large arteries occurs in a transitory manner, and without any organic disease.

Diseases of the aortic valves already described.

1. Ossific concretions preventing the juxtaposition of the valves when in action, or if not projecting, impeding their motions. (N.B. The thrilling vibration propagated through the arteries is always most evident in those cases.)

2. Dislocation causing the valves to occupy a different level.

3. Perforations generally at the base of the valve.

Diseases now first described.

4. *Thickening and shortening.*—This disease is very generally passed over. The healthy transparent appearance of the valve is to be ascertained by a comparison between the valves of the aorta and those of the pulmonary artery, the latter being almost always healthy except in cases

of emphysema of the lungs. When the valves are thickened, they are also contracted, and thus a triangular space is left between them.

5. *Adhesions.*—This is a very rare disease. The figure is taken from a preparation from a patient who died under the usual symptoms complicated with those of emphysema of the lung and adherent mitral valves, both of which diseases were found after death.* This specimen is to me *unique*. It unites permanent patency with permanent contraction. I conjecture that the very rare cases reported of want of a valve were produced by adhesions of the surface of the valve to the aorta.

6. *Elongation and consequent puckering or falling down of the valves.*—In order to appreciate this change, it is necessary, in the first place, to consider the length of the valves required for closing the orifice and preventing the regurgitation of the blood. Let us suppose the transverse section of the aorta to be an exact circle, and that the valves are all of equal dimensions. Then, as they must all meet at the centre, and as they must form straight lines when pressing against each other in action, it follows that each equals two radii of the circle, and that the sum of them all is equal to six radii, or three diameters, which is nearly equivalent to the diameter of the circle; and hence the length of the three valves, taken together, should be equal to the circumference of the aorta.

There is, however, a circumstance to be taken in connexion with this estimate, namely, that the valve which does not subtend the orifice of either coronary artery is always larger than either of the others; consequently the point of meeting of the three valves is beyond the centre, and, therefore, the sum of their sides must be somewhat larger than the circumference of the aorta. In my measurements of healthy hearts, I find this always to be the case, but only within certain limits. In cases in which there was bounding of the large arteries, and hypertrophy of the ventricles, I found the sum of the lengths of the valves to be to the circumference of the aorta as above four to three; while in cases in which there were not those indications of regurgitation, they were only as seven to six.

Elongated valves, although otherwise of healthy appearance, may generally be observed either to fall down in folds, or to project into the canal in consequence of their bases being occupied by structure of cartilaginous or osseous consistence.

In the last place, we consider how

* A figure or diagram occurs here in the MS., as well as in reference to several other diseases; but they are scarcely of a nature to admit of our giving them in wood-cuts.—ED. GAZ.

bounding of the large arteries takes place at times in a transitory manner, and where no organic disease of the valves can be suspected. This is observed after losses of blood, and during tumultuous action of the heart from mental or nervous influences. It must be at once conceded that the bounding in these cases occurs from an open state of the aortic valves, just as in the cases of organic disease; and then the sole difficulty lies in explaining how this open state can be produced for a time, and afterwards cease. This difficulty will subside when we remember the following facts: that the valves are supported by the column of blood entering the ventricle, and that when this is taken away, or becomes deficient, an undue strain must take place on them; that in tumultuous actions of the heart, the whole organ, but especially the ventricular portion, is thrown into unusual positions, as may be perceived by placing the hand over the cardiac region, and that by holding any heart, however healthy, in any position, except the one in which the three aortic valves are at the same level, a fluid may be poured from the aorta into the ventricle. Again, that in those cases of tumultuous action, there is always regurgitation from the heart into the pulmonary vessels, as is evinced by the panting and difficulty of breathing, which can only take place by the mitral valve being held down, and that in this way both the two preceding causes and the last are simultaneously in action.

To conclude, these valves being, as it were, the portals at the gate of life through which the blood issues to supply energy to every part, no disease, however slight, can long exist in them without being followed by serious consequences; the first of these is hypertrophy of the ventricle, causing a tendency to apoplexy; and the second is a defective action in the capillaries, producing Bright's disease of the kidneys, congestion in the liver, and other organs. From the great frequency of disease of those valves in the advanced stages of life, it may be estimated as the climacterical disease of the heart. Standing, as they do, at the base of the arterial system, the slightest failure in their function tends sooner or later either to produce the diseases now mentioned, or to destroy the equilibrium between the two divisions of the circulation, and so, by degrees, to subvert the health of the individual.

DR. LAW concurred with Dr. Osborne on the constancy of the phenomenon of the bounding of the larger arteries, as a sign of imperfection of the aortic valves, as all the instances that he had met with of this particular disease, (and they were not a few) had exhibited this sign. Still, it was far from being confined to this modification

of heart disease, or even to heart diseases. He had observed it in permanent patency of the mitral valve, also in cases of hæmorrhage, in chlorosis, and even in protracted diarrhœa; he considered the phenomenon to depend on an altered relation between the stream of blood and the artery; whether this resulted, as in the case of aortic valve disease, from the impediment to the issue of a full column of blood from the ventricle, owing to the valves so losing their normal organization as not to allow them to apply themselves closely against the sides of the vessel, and also to their admitting the regurgitation of this diminished quantity of blood; or in cases of patulous condition of the mitral valve; then as much, or more, of the blood passed back from the ventricle into the auricle, than proceeded from the ventricle into the aorta; or if this altered relation were the effect of a positive and direct diminution of the mass of the circulating fluid, as in cases of hæmorrhage, or if the diminution were less direct, as in diarrhœa; or again, if the quantity of blood continuing the same, its crisis were less than natural, all these different conditions concurred to produce this change of relation between the stream of blood and its containing vessel, the result of which was, the vessel not being kept in such a state of tension as to prevent a molecular motion between its particles, communicating a sense of vibration or thrilling. This explanation seemed, to Dr. Law, to provide for all the cases. Although Dr. Osborne had entered very fully into the subject of diseases of the aortic valves, and had brought under notice some that had hitherto been overlooked, still Dr. Law did not think that he had sufficiently dwelt upon the different diseased conditions of these valves, as exhibited at the different periods of life; that while the individual, advanced in life, presented the ossific degeneration of them, the younger subjects exhibited their disease as the result of inflammation, whether of a specific character, as rheumatism, or as the effect of cold, which seemed to Dr. Law to be the ordinary work of generation of vegetations, which had formerly been looked upon as venereal. Dr. Law distinguished between the disease of the valve, where the change, whatever it was, took place in the substance of the valve, and when it was a deposit on the surface. In reference to Dr. Osborne's observation of the frequency of hypertrophy of the left ventricle of the heart, as caused by disease of the aortic valves, and of apoplexy, as the consequence of this, Dr. Law believed that the diseased valves, in this case, by breaking the form of the hypertrophical ventricle, actually served as a protection to the brain; and that when disease of the

brain did coexist with diseased aortic valves, it was not apoplexy, the result of the blood driven with unusual impulse to the brain, that occurred, but ramollissement of the organ, from the diseased valves obstructing the course of the blood to it, and thus interrupting its nutrition.

Dr. Law was of opinion, that, in order that an hypertrophied left ventricle produce apoplexy, if, as was most commonly the case, the hypertrophy depended on some obstruction to the circulation, such obstruction must be situated more remote from the heart than the origin of the vessels which convey the blood to the brain. Dr. Law remarked upon the confusion that prevailed upon the subject of cerebral disease, as connected with disease of the heart; that many modifications of disease, very dissimilar in their nature, and equally differing in the treatment they required, were mixed up together, and treated with equally little discrimination. He conceived, without entering very minutely into the subject, that there were four different kinds of disease, which required to be carefully distinguished. 1st. Apoplexy produced by hypertrophy of the left ventricle of the heart. 2d. Ramollissement of the brain, from obstruction to its circulation, such obstruction being placed between the heart and the vessels conveying the blood to the brain. 3d. Congestion of the brain, from narrowing of the left auricular ventricular openings, and consequent congestion of all the vessels placed behind this impediment. 4th. Failure of the brain's action, as the organ of innervation, from the heart's structure undergoing such a change as to unfit it for driving the blood, its proper stimulus, to the brain; as when its muscular structure underwent a fatty degeneration. The sudden death in this case was generally considered an apoplectic seizure, whereas its symptoms entitled it to be regarded as a prolonged syncope. The practical importance of distinguishing between these several modes of disease appeared to Dr. Law too obvious to require of him any lengthened observations.

Dr. Sargent agreed with Dr. Law that death sometimes took place, accompanied by the usual symptoms of apoplexy, where disease of the heart had previously existed, without hypertrophy of the left ventricle; nay, under conditions which might be looked on as the opposite of such disease: as where dilatation of the right ventricle and fatty degeneration of the substance of the heart existed; in which every trace of the true fibrous structure was lost in a greasy "hepatized" condition (if he might use the expression). Dr. S. detailed a case of this kind, where the *rhythm* of the heart was completely lost in a weak

undulatory irregular motion; its *impulse* much diminished, and no "bruit" of any sort to be discovered. The head symptoms occurred prominently amongst the other impaired functions which usually accompany cardiac disease, as referred to by Dr. Osborne, in his paper; the respiratory system was much deranged; orthopnoea, dyspnoea, cough, and frothy expectoration, existed to an alarming degree; yet, after careful and extensive examination by the stethoscope, no severe disease of the lung was detected. After several weeks' treatment, the patient appeared to recover so considerably that daily attendance was deemed unnecessary, though the most unfavourable prognosis was persisted in. The thirty-fifth day from first examination of the case, death took place suddenly, as from apoplexy; and post-mortem examination revealed the above described organic condition of the heart, which appeared pale and macerated: the valves appeared perfectly healthy, as were also the lungs.

RUSSIAN PRACTICE.

[Concluded from page 476.]

Operations performed by Dr. Heine with his osteotome at Cronstadt. Communicated by Dr. Meleschko.

WHEN Dr. Bernhard Heine of Würzburg, was at Petersburg by the desire of the Russian government, he visited the great naval hospital at Cronstadt, where he found the following cases suited for the operation with the osteotome.

1. Andr. Mateen had severely injured his left tibia with a cable on board the Brienne, and had been treated as well as circumstances would allow; but when the ship returned to Cronstadt in the July of the same year, he was transferred to the naval hospital. Meantime an ulcer secreting a large quantity of thin pus had formed upon the tibia. It was of irregular shape, about an inch in size, but not well defined. To this were added feverishness and scorbutic symptoms. On examination with a probe, the periosteum was found to be injured in a circumference of four inches. The first treatment was directed against the scurvy and the fever, both of which were gradually cured by suitable remedies. On this, the wound became somewhat cleaner, and began to granulate; but in spite of incision and proper treatment, it was not possible to prevent necrosis. Dr. Heine found the ulcer in the following state. On the left tibia were seven separate sores lying within the compass of four inches. The external opening common to them all was not very large,

being about half the size of a finger-joint, with thick and callous edges. Lower down, however, the sores were larger, and were at their largest on the surface of the bone, from which point fistulæ ran in all directions; and many of them, though separated above, united into one focus below, as was clearly shown by injections. The bone was easily reached with a probe; and in some places it could be taken hold of with nippers, and the sequestrum could be felt to be somewhat moveable.

After Dr. Heine had made an incision through the skin for the whole length of the ulcer, he drew it aside, and, placing his osteotome on the sequestrum, sawed it through across its whole breadth. A piece of the sequestrum, three inches long, could now be removed; and the remainder of it was then taken out with slight movements of the saw: the whole was rather more than four inches long. The wound was washed out, and lightly bandaged: the operation was followed by traumatic fever, but it was not violent. The wound healed very slowly, as splinters were continually thrown off, and came away by suppuration.

2. Iwan Tarossoff had a very similar affection of the left tibia. The operation was like the last, but performed by Dr. Heine's friend, Dr. Samson. The wound improved but slowly, small splinters being continually thrown off; yet it gradually closed, and the patient began to walk about with a stick, but still had considerable pain in the bone.

3. Hippolytus Iwanoff injured his left fore-arm, in 1834, while furling the sails. Necrosis gradually came on, and Dr. Heine's skilful hand removed, with little difficulty, a sequestrum four inches and a half long. After laying the part bare, he only sawed through the sequestrum in the middle, and then easily took out both pieces. The operation was but slightly painful, and lasted hardly a quarter of an hour. The wound healed proportionably quicker than in the previous cases; the patient, however, is recovering the use of his hand but slowly. The German translator here extols the advantage of the osteotome in removing sequestra, observing that those who have been obliged to operate with hammer and chisel will appreciate the advantages of this excellent instrument.

On the external application of Croton Oil, by Dr. Slonetzki Michailoffski.

In a case of obstinate sciatica, where various internal and external remedies had been employed without advantage by others as well as the author, a cure was soon effected by rubbing in twelve, and afterwards fifteen, drops of croton oil daily,

on each thigh, along the course of the sciatic nerve. On the third day there appeared great redness and a considerable eruption, with obvious relief; and the improvement was so rapid, that, on the fourth day, the patient was able to rise and move about; and though motion was attended with pain, yet this, too, disappeared after a couple more frictions. Some time afterwards the author's own child, eighteen months old, who had been previously healthy, after taking cold, was attacked with an affection of the hip-joint; and, according to the opinion of the best physicians of the place, the true hip-joint disease was to be apprehended, and the most active measures were recommended. But, as leeches and blisters gave no relief, the author resolved to rub four or five drops of croton oil on the hip-joint. This method was followed by obvious improvement in fourteen days, and a cure in six weeks. Although the remedy produced violent redness, yet it did not cause either fever or any other disturbance of the system in the child.

Remedies for Rabies.—Dr. Schorstein has seen eight patients bitten by mad dogs. They were treated in the same way externally. Six recovered under the use of the Tr. Genistæ; the other two by Werlhof's pills against rabies. The receipt is as follows:—

R. Pulv. subt. cantharid. gr. j.; Bellad. fol. pulv., Calomel. aa. gr. ij.; Camphor. gr. iv. M. f. c. mucil. acac. pil. vj.

Three of these pills are to be taken twice a day. The hydrophobic vesicles, described by Maroketti, appeared only in one patient, a girl; and they were cauterized by the author.

Adhesion of long standing.—At the meeting of the society of Russian physicians, on the 19th of February, 1838, a communication was read from Dr. Tarossoff, physician to the Ural mines. A lad, the whole of whose left fore-arm had adhered to his chest, since the age of eleven, in consequence of a burn, came to Dr. Tarossoff at twenty, to be operated on. The shoulder-joint regained its power of motion but slowly.

On indigo in intermittent fever.—Dr. Schorstein found the following compound of advantage in spring intermittents:—

R. Indic., Magn. Carb., Flor. Chamom., aa. gr. v. M. f. pulv.

A powder to be given every hour during the apyrexia.

New mode of scarifying with the leaves of the Elymus arenarius.—Dr. Pehnikoff first convinced himself of the benefit obtained by using the rough side of the leaves of this plant, to scarify old ulcers of dirty appearance, and secreting bad pus. He then

began to use this remedy in inflammation of the conjunctiva, purulent ophthalmia, pannus, and pterygium; particularly in inflammation of the conjunctiva, and frequently with results approaching the miraculous. The bleeding is far more considerable than after leeches, or scarification of the conjunctiva with a lancet, and at the same time the pain is so remarkably diminished by it, that on the following day the patients commonly ask for a repetition of the operation, which is generally requisite for four or five days. Fresh leaves are the best, and from June to August is the best time for their application; but dried leaves, when soaked, do good service. Dr. Magaziner, who had to inspect the hospital, attended by Dr. Pehtnikoff, attests the advantage of these scarifications in No. 5 of the Journal.

Hooping-cough.—Dr. Michailoffsky Slo nezki has seen much advantage from linseed in this disease; either the infusion made into a syrup with sugar, or the seeds roasted and prepared like coffee. The latter is particularly good in the later stages of the disease. The German translator has been assured by Swedish families that this remedy is also much esteemed among the people in their country.

Practical Observations by Dr. Bajanoff, physician to the Bomberski Military Hospital.

1. *Hæmatemesis in a new-born child.*—A girl, five days old, vomited blood; and the vomiting returned the next morning, coagulated blood being thrown up ten times. In the evening the child vomited again, but less. The body was swelled, and much flatus was discharged, with perfectly black blood, just as in *melæna*, by stool. The author had previously given the emulsion of bitter almonds, and he now ordered a tea-spoonful of alum whey every two hours, and the abdomen to be rubbed with the camphorated oil of hyoscynamus. At three in the following afternoon, the patient again vomited much coagulated blood, took whey for two days more, and recovered perfectly. The Russian doctor asserts that the child had lost near three pounds of blood, but of this the German translator hints his disbelief.

2. *Hemorrhage from the eyes.*—This recurred several times from the veins of the albuginea, in a very old military chief of the Don Cossacks, without disturbing his general health.

3. *Affections of the urinary organs in intermittent fevers* were frequently observed by the author in Irematia. (Was there not at the same time an affection of the spinal nerves?)

4. *Riding on horseback in intermittent fever* was tried by many in that country, but did harm instead of good.

Vomiting cured by raw sourcrouit.—Neither internal nor external remedies had been of any avail, and the patient earnestly begged for something acid, on which Dr. Figurin prescribed sourcrouit. She took about a table-spoonful at a time, and discontinued her medicine. The vomiting recurred only once; on the following days she ate the sourcrouit again with pleasure, and with the most satisfactory result.

Case of iritis, keratitis, a deep ulcer of the left cornea, hypopyon, and purulent ophthalmia of both eyes, by Dr. Sarenko, director of the Orange Hospital.—The author cured this desperate case in six weeks, with the ordinary remedies. His treatment was at first usually complicated. Thus, on the second day he prescribed a purgative; a table-spoonful of the camphorated infusion of arnica flowers every hour; five leeches to each temple; and to the eyes, 1, a solution of lapis divinus, twice a day; 2, the tinct. opii croc. thrice a day; 3, the pus to be frequently washed off the eyes with decoction of mallows; 4, *sacculi aromatici*; 5, the eyelids to be touched with an ointment of white precipitate, of the strength of twenty-four grains to an ounce of fresh butter. The German translator thinks the quantity of white precipitate extraordinary great. In the London formula, however, the quantity is a drachm to an ounce and a half. Would this be too strong for the eyes?

Professor Bujalski's method of curing Carbuncles.—The carbuncle is not to be cut into, but the whole ulcer, and the reddened part surrounding it, is to be covered with a poultice made of bread and cold Goulard water. This is to be changed from four to six times in the twenty-four hours, is to be used day and night, and is to be continued when the carbuncle breaks up. When it is changed the pus can easily be squeezed out; the destroyed cellular substance may be drawn out as far as possible with the forceps, and cut off with scissors. When all the suppurating part is got rid of, the swelling sinks, and the redness disappears; the poultices are then to be discontinued, and the spot is to be dressed with the Ceratum Saturni, or some ointment.

In villages, where Goulard water is not to be had, a fifth or sixth part of strong vinegar is to be mixed with fresh water, and the dough of black bread, or leaven, with the addition of vinegar; this is the whole external treatment. The professor does not recommend an incision, even if there is an accumulation of pus; nor are leeches to be applied to the carbuncle, to diminish its size, as it will certainly enlarge over the places where the leeches were put on. After a crucial incision has been made, the dressing a carbuncle with an

ointment sharpened with powdered cantharides, or red preeipitate, is a very rough sort of treatment.

As carbuncles arise from constitutional causes, their internal treatment is important, but not the external. Dr. Bujalski says, that for more than twenty years he has not cut a single carbuncle, either in hospital or private practice, and has not lost a single patient. Petersburg contains many whom he has cured of carbuncle.

On this the German translator observes, that the extensive hospital and private practice of the celebrated author of the *Tables of the Arteries*, makes this simple method of treatment well worthy of consideration. Yet he has not ventured to adopt it, but has begun of late, instead of the crucial division, to make two long parallel incisions, leaving a space between them of half or three quarters of an inch, or a whole one, according to the size of the swelling. The knife is to be held somewhat obliquely, with the point turned a little to the centre of the carbuncle, which will empty itself very well by these incisions. The rectangular flaps made by the crucial incisions are apt to unite unevenly, causing great pain to the patient for a long time—an inconvenience which is avoided by this method. Even if a part out of the middle of the long flap of skin, formed by the two incisions, should be lost by a spontaneous breaking-up, nay, even if the flap should be severed in two, still the parts will heal with a more favourable surface than the four-corner flaps of the crucial incision.

Cure of an Epidemic Hemoptysis, by the Lichen pulmonarius, or Lobaria pulmonaria.—Mr. Lesskoff, a landed proprietor, states, that an infusion of this plant was drunk both by gentry and peasants, in the village of Krai, situated in the circle of Belozersk, and government of Novgorod; and it was so serviceable, that no one died after its use, though the disease was very fatal before. On this the German translator observes, that the recovery might depend on the diminished violence of the epidemic.

PRIZES—COLLEGE OF SURGEONS.

To the Editor of the Medical Gazette.

SIR,

IN the GAZETTE of last week, I observe a letter from a correspondent signed Δ, suggesting some improvements in relation to the delivery of the College Prizes.

I think it but due to the president and council of the College of Surgeons to state that not only was the last Jacksonian prize "awarded in person" by the presi-

dent of the council in full assembly, but in a manner well calculated to render the prize not only a gratifying distinction, but an object of ambition to any member of the profession. A testimonial, on parchment, was delivered at the same time, recording the successful candidate's name, and the title of the essay, signed by the president. It is evident, therefore, that the suggestions are superfluous, being only in strict conformity with the practice already in force.—I am, sir,

Your obedient servant,

RUTHERFORD ALCOCK.

13, Park Place, St. James's,
June 22d, 1840.

WEEKLY ACCOUNT OF BURIALS.

From BILLS OF MORTALITY, June 30, 1840.

Abscess 2	Inflammation 9
Age and Debility . . . 13	Bowels & Stomach . . . 1
Apoplexy 7	Brain 2
Asthma 4	Lungs and Pleura . . . 9
Childbirth 1	Insanity 1
Consumption 30	Jaundice 1
Convulsions 18	Meeles 2
Croup 1	Mortification 2
Dentition 1	Paralysis 2
Dropsy 10	Scrofula 1
Dropsy in the Brain . . 5	Small-pox 5
Dropsy in the Chest . . 1	Stricture 1
Fever 6	Thrush 2
Fever, Scarlet 11	Unknown Causes . . . 77
Heart, diseased 1	
Hernia 1	Casualties 7
Hooping Cough 2	

Decrease of Burials, as compared with }
the preceding week } 47

METEOROLOGICAL JOURNAL.

*Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.*

<i>June.</i>	THERMOMETER	BAROMETER
Wednesday 24	from 46 to 60	29.73 to 29.87
Thursday . . 25	45 62	29.91 29.95
Friday . . . 26	47 66	30.02 30.09
Saturday . . 27	56 70	30.10 30.07
Sunday . . . 28	57 69	30.03 29.99
Monday . . . 29	51 70	29.99 29.98
Tuesday . . 30	53 66	29.94 29.88

Winds, W. and S W.

Except the 24th, generally cloudy. Rain fell on the 25th, 26th, 29th, and following day.

Rain fallen, .115 of an inch.

CHARLES HENRY ADAMS.

NOTICES.

The cases alluded to by Dr. H. will be very acceptable.

We regret that we cannot insert the letters from Walworth. No good would in our opinion result from their publication.

WILSON & OGILVY, 57, Skinner Street, London.

Showing the Number of Deaths from all Causes, registered in the Four Weeks ending June 20, 1840.

Causes of Death.	June 1840.				Weekly Average, 1838.
	May 24—30th.	31st—June 6th.	7th—13th.	14th—20th.	
Small-Pox.....	15	10	22	11	73
Measles.....	16	22	20	33	11
Scarlatina.....	39	33	40	31	29
Whooping Cough.....	20	28	26	14	40
Croup.....	6	5	9	4	7
Thrush.....	3	4	3	8	6
Diarrhoea.....	2	7	9	4	8
Dysentery.....	1	2	1	1	2
Cholera.....	1	..	1	..	.3
Influenza.....	2	1	2	1	1
Typhus.....	26	21	23	19	78
Erysipelas.....	4	6	5	6	8
Syphilis.....	..	..	..	1	1
Hydrophobia.....	..	..	..	1	.2
Total	135	139	161	133	265
Cephalitis.....	10	15	17	10	10
Hydrocephalus.....	32	30	29	32	34
Apoplexy.....	11	12	8	14	19
Paralysis.....	19	12	8	15	14
Convulsions.....	49	65	54	62	67
Epilepsy.....	5	3	4	1	4
Insanity.....	..	..	2	..	1
Delirium Tremens.....	1	3	3	..	1
Dis. of Brain, &c.....	11	6	10	5	6
Total	138	146	135	139	156
Quinsey.....	..	..	..	..	2
Bronchitis.....	7	7	8	8	8
Pleurisy.....	1	3	1	2	2
Pneumonia.....	69	49	54	54	71
Hydrothorax.....	3	6	3	4	6
Asthma.....	10	10	10	8	28
Consumption.....	147	137	128	147	146
Dis. of Lungs, &c.....	13	11	13	8	10
Total	250	223	217	231	275
Pericarditis.....	1	1	1	..	.3
Aneurism.....	1	2	1	2	.5
Dis. of Heart, &c.....	19	16	18	16	15
Total	21	19	20	18	16
Teething.....	13	12	17	17	15
Gastritis—Enteritis..	13	20	22	19	17
Peritonitis.....	..	1	..	..	1
Tabes Mesenterica.....	..	..	5	7	3
Ascites.....	2	2	..	..	.4
Ulceration.....	1	1	3	..	1
Hernia.....	1	2	2	2	2
Colic or Ileus.....	1	1	2	1	4
Dis. of Stomach, &c...	8	5	2	4	4
Hepatitis.....	1	1	..	..	1
Jaundice.....	..	3	1	3	2
Dis. of Liver, &c.....	11	6	10	7	7
Total	51	54	64	60	57

Causes of Death.	June 1840.				Weekly Average, 1838.
	May 24—30th.	31st—June 6th.	7th—13th.	14th—20th.	
Nephritis.....	..	..	1	1	.5
Diabetes.....	..	..	..	..	.4
Stone.....	1	..	..	..	.4
Stricture.....	..	..	..	..	.6
Dis. of Kidneys, &c...	6	4	2	1	3
Total	7	4	3	2	5
Childbed.....	9	3	5	6	8
Ovarian Dropsy.....	1	..	..	1	.3
Dis. of Uterus, &c. ...	2	2	1	3	2
Total	12	5	6	10	10
Rheumatism.....	1	3	2	3	4
Dis. of Joints, &c....	2	8	4	2	4
Total	3	11	6	5	8
Ulcer.....	..	..	1	..	.4
Fistula.....	..	1	..	..	.4
Dis. of Skin, &c. ....	..	..	..	1	.4
Total .....	..	1	1	1	1
Inflammation.....	11	6	1	6	18
Hæmorrhage.....	3	3	3	1	4
Dropsy.....	34	30	35	33	34
Abscess.....	3	6	4	5	4
Mortification.....	8	5	6	2	4
Scrofula.....	2	4	3	5	1
Carcinoma.....	9	3	10	8	6
Tumor.....	1	2	4	2	1
Gout.....	1	1	..	..	1
Atrophy.....	5	11	3	4	4
Debility.....	18	15	20	19	12
Malformations.....	..	2	3	..	1
Sudden Deaths.....	13	16	19	10	12
Total	108	104	111	95	102
Old Age, or Natural } Decay..... }	54	56	56	54	79
Intemperance.....	..	..	..	2	.4
Privation.....	..	1	..	..	.6
Violent Deaths.....	16	21	36	19	25
Total	16	22	36	21	26
Causes not specified..	..	1	3	2	13
Deaths from all Causes	795	785	819	771	1013

	AGES.			
	May 1840.	0—15	15—60	60 & upwards.
May 24—30th.....	339	287	166	
31st—June 6th.....	372	271	142	
7th—13th.....	382	300	133	
14th—20th ..	374	262	135	
Weekly } Average, 1838 }	466	352	192	

Estimated Population, 1840.	May 24th—30th.	31—June 6.	7th—13th.	14th—20th.	Weekly Average, 1838.
West Districts, 308,920	118	123	125	110	156
North Districts, 414,458	151	148	148	139	172
Central Districts, 369,722	146	160	165	158	208
East Districts, 411,635	189	174	156	170	239
South Districts, 450,265	191	180	225	194	194
1,955,000	795	785	819	771	1013

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JULY 10, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISLOCATIONS, *continued.*

HUMERUS — RADIUS and ULNA at the
ELBOW — either separately. WRIST —
CARPUS.

HUMERUS, *continued.*

It is not in the present day possible to deny the existence of dislocation *backwards*; that is to say, where the head of the humerus passes between the inferior angle of the acromion and the head of the triceps. It is usually produced by a fall on the elbow, which is directed forwards and upwards. The head of the humerus, carried backwards and a little downwards, destroys the capsule at that point, and is borne towards the base of the acromion; this is the most frequent, the *sub-acromial* variety: or passing further backwards, it rests under the spine of the scapula in the *infra-spinatus fossa*; this is the *sub-spinatal* luxation.

Symptoms.—When we examine a thin person, suffering from dislocation *backward*, we find the roundness of the shoulder wanting, and in its place an evident depression; the edges of the acromion are easily felt, and there is no hard tumor or projection in front of the joint, or in the axilla. If we press firmly there, we may feel the inferior border of the glenoid cavity. Below the commencement of the spine of the scapula, where the acromion arises, is a very prominent round hard

tumor. Sir A. Cooper's observations shew that the arm hangs at the side; in Sedillot's case the arm was directed forwards, crossing obliquely the vertical direction of the body. Rotation of the limb causes the tumor to move. In the case observed by Sedillot, the arm, measured from the summit of the olecranon to the external border of the acromion, was an inch longer than that of the opposite side. Supination of the hand was impossible, because the humerus was forcibly rotated inwards; the highest degree of supination of the radius scarcely enabled the patient to bring the palm forwards, whilst pronation was always exaggerated. The whole limb was wasted (a third less than that of the opposite side), habitually cold, and the patient could make no use of it.

Diagnosis.—Some signs are common to backward dislocation, and fracture of the surgical neck. *External depression of the shoulder* is immediately below the acromion in luxation; lower down in fracture. *Tumor in the axilla* in luxation is rounded, and voluminous; in fracture, irregular and small. In both cases *the elbow is removed from the side*, and no voluntary motion can be executed; but in fracture the arm can easily be brought to the side; only incompletely, and with much pain, in luxation. In downward luxation the limb is *always elongated*; it is always a little shortened in fracture. The *reduction* of fracture is easy; that of dislocation is difficult: in fracture the displacement is reproduced; in luxation it is not. Subclavicular, or upward dislocations, are more easily confounded with a fracture of the neck, because it is in this species of luxation that there is shortening, as in fracture, whilst in the other varieties there is always elongation. In admitting with Malgaigne that, never, in luxation of the head of the humerus, is there shortening, we singularly facilitate the diagnosis, because in fracture there is always shortening; it is only then neces-

sary to measure the limb, to know whether it is luxated or fractured.

Dupuytren, in his *Clinical Lectures*, insisted much upon the diagnosis of these luxations. Every individual affected with luxation or fracture has fallen on the side corresponding to the injury—(this is not strictly correct)—and the patient always believes that he fell upon the point where he feels pain. When called to a luxation, the fall having been broken by the palm of the hand, this part is dirty, ecchymosed, or excoriated. We discover in fracture that there was a fall on the shoulder, that the hand bears no mark of violence; but that we find those marks upon the clothes or upon the skin of the shoulder. In luxation, the pain is owing to the destruction of the capsule and surrounding parts, and if there be ecchymosis, it is at the internal or anterior surface of the arm; in fracture, instead of being rare, as in luxation, ecchymosis is almost constant, it is on the cushion of the shoulder that it exists. An ecchymosis or excoriation at the internal and inferior part of the arm is, in case of doubt, an important index of luxation.

The nervous and vascular plexus of the arm is sometimes compressed; from thence arise œdema, cramps, paralysis of the arm, or of the deltoid, only when the circumflex nerve is compressed or destroyed. It is only because the relations of the head of the humerus with those organs are ill appreciated, that persons are surprised that such symptoms are not more frequent: the fact is, the form of the head of the bone, and that of the nerves and vessels, facilitates that gliding which prevents compression. Paralysis of the deltoid is not, however, very rare: it may be dissipated by blisters or moxas, if the nerve has only been contused: but when it has been destroyed the chances of re-establishing the functions of this elevator of the arm are much lessened.

Post-mortem inspections.—The examinations made after recent luxations have presented the following lesions. *Bones*: very unfrequently, fracture of the anterior border of the glenoid cavity; still more rarely, fracture of the posterior border. Sometimes the greater tuberosity of the humerus is, as it were, torn off by the tendons of the supra and infra-spinati and the teres minor. *The capsule*, destroyed in the direction of the luxation, consequently most commonly at the anterior border of the glenoid cavity, between the subscapularis and triceps, the laceration is always large enough for the head of the bone to pass easily outwards. *Tendons*: that of the long head of the biceps is rarely ruptured, but its gutter is often destroyed; if not, the tendon must be curved to follow the humerus, con-

sequently there are tension of the biceps and flexion of the forearm. The tendons of the sub-scapularis, the supra and infra-spinati, and teres minor, are sometimes ruptured. *Muscles*: the sub-scapularis is ordinarily relaxed, sometimes contused, sometimes destroyed; the head of the bone may pass between its fibres, and be applied upon the serratus magnus. *Principal vessels and nerves* are not commonly seriously injured: in the greater number of cases the head of the bone passes towards the chest behind them. *The cellular tissue* is more or less infiltrated with blood; if the luxation be old it is thickened and condensed.

A dislocation may be simple or complicated; may be complicated by fracture of the glenoid cavity (Flaubert) or of the humerus. The capsular ligament is ordinarily destroyed, and the tendons injured or displaced. Marx states a case where the bicipital groove was destroyed, and the tendon thrown in front of the head of the bone, crossing the tendon of the sub-scapularis. It may be complicated with other fractures.

Treatment.—The treatment consists in reducing the displacement as quickly as possible; even the complication of fracture of the humerus would not prevent our endeavouring to reduce it, if the superior fragment were sufficiently long; but then the reduction can only be accomplished by making, with the hand, extension on the superior fragment. Attempts at immediate reduction would be contra-indicated, if decided inflammatory action had followed the injury; no doubt the best way of lessening that action would be by reducing the displacement, but as this could not be done without violence, it should not be attempted. If the luxation be recent, we at once proceed to reduction; in a few minutes after the accident it is sometimes so easy that the surgeon can, alone, accomplish it; but if the patient be very robust, if he have a very excitable nervous system, and strong spasmodic action be developed, a large bleeding, tartar emetic, intoxication, or narcotics, may be necessary. During the attempts it is wise to address startling questions to the patient, for the purpose of distracting his attention from the immediate business of the moment, for by this means muscular relaxation is often obtained. In luxations of the shoulder, during attempts to reduce it, it is always desirable to prevent the patient from resting his feet on the ground; they should be kept in a horizontal position: this is an advantage which is obtained in the method of Hippocrates and Cooper, by placing the patient on his back, and the heel in his axilla. If the luxation be old, bleeding and bathing are good preliminary means.

An important question still remains to

be decided, before we proceed to act — is there a time beyond which we ought to abandon all attempts at reduction? Without entering at large upon the discussion, or pointing out the many serious accidents which have attended upon violent and prolonged attempts to reduce old luxation, it may be sufficient to say, that many luxations of the arm have been reduced by the eighteenth day, the twenty-second, the thirty-second, the thirty-seventh, the forty-first, the forty-fifth, the forty-ninth, the fifty-first, the sixtieth, the eighty-second, the ninetieth, the ninety-eighth day, at the end of a year (Sedillot): and even a longer period (Malgaigne).

We cannot, here, point out in detail the many methods which have been employed to accomplish the reduction of dislocation of the shoulder; the end of all should be, to make counter-extension on the scapula, to render this bone as fixed as possible, whilst extension made upon the arm should bring the head of the bone on a level with the glenoid cavity, at the same time that a proper direction is given to the shaft of the humerus. The mode of reduction most commonly followed is to seat the patient on a chair, to pass a reel towel or any similar contrivance around the chest, just below the head of the displaced bone; the towel or girth is then fixed to a ring in the wall, or entrusted to two assistants; the wrist being previously protected, another towel is carried around it, the ends crossing on the palmar surface. The surgeon stands on the outer side of the limb while extension and counter-extension are properly made, that is, gradually, and without shock; when carried sufficiently far, the time comes for distracting the patient's attention. When this plan is pursued, the direction of extension must vary with the displacement; if it be axillary, the efforts should be made directly downwards and outwards, the surgeon assisting in directing the head of the bone upwards and a little outwards; at the same moment the assistants should bring the limb downwards and a little forwards. If the luxation be sub-scapular or sub-clavicular, the extension is directed at first outwards, so as to bring the head of the humerus to the level of the lower part of the glenoid cavity: then we proceed as in the former case. If the luxation be directly inwards, extension must be made at first horizontally outwards and a little backwards; the wrist is then brought forwards and downwards; and during this time the surgeon brings the elbow forward, and the upper part of the humerus backwards. If the primary displacement be backwards, an opposite course should be taken; extension should be made at first outwards, then downwards, and a little backwards.

In case of a recent axillary luxation, the surgeon may sometimes reduce it alone; he seizes the elbow, extends it suddenly, whilst with the left hand in the axilla he pushes the head of the humerus upwards and outwards. If he pursue the plan of Hippocrates and Sir A. Cooper, he may often succeed without assistance. The patient lies on his back, the surgeon also lies down, but in the opposite direction; he grasps with both hands the wrist of the luxated arm, he places the heel in the axilla, upon the head of the bone, which he pushes upwards and outwards. Here the counter-extension is made, either by the contraction of the rhomboideus and trapezius, or by the heel itself, which maintains in place the inferior angle of the scapula; this method is often used when no assistants are near. Nearly a century ago, White proposed a method of reducing downward and forward dislocations, which has been very little used, but is still a successful method, and has been of late revived by French surgeons; it consists in raising the arm over the head, until it is parallel with the trunk, and then making extension on it: counter-extension is made by acting upon the acromion and spine of the scapula. When the surgeon thinks sufficient extension has been made, he forces up the head of the humerus into the glenoid cavity.

The mode I employ has never hitherto failed me: it was the mode usually employed at the Bristol Infirmary during my pupillage; and one person, without assistants, will rarely fail to reduce a dislocated shoulder by this means. The patient is placed upon a chair, of such a height as will not permit the feet to reach the ground. In this chair he sits sideways. The back of the chair should be high enough to reach unto the axilla; if it be too high, the patient can be raised by placing pillows under him. The back of the chair should be padded so as not to hurt the axilla. The arm is now placed over the back of the chair. A reel-towel is passed round the arm, just above the elbow, in a slip-noose. With the end of the towel you make a stirrup, into which you put your foot, and begin to make steady pressure, in such a direction as may be necessary: both your hands are unencumbered, to manipulate as may be found most advantageous. In this simple way you may reduce any recent dislocation without assistance, and with no other apparatus than may be procured in every house.

If the dislocation be old, and you have reason to believe adhesion to be formed, you may want more force, and it may be necessary to have recourse to pulleys. They are often recklessly used, without considering the intensity of the force employed.

For the purpose of overcoming this defect, Sedillot invented a "dynamometer," which he considered a safety valve; but how can you by this means estimate the force necessary to be employed in each case, one man having much, another little muscular power? These are matters which can usually be best regulated by the intelligence of the surgeon.

In many cases, at the moment of reduction, a snap or jolt is heard; it results from the articular surfaces coming suddenly together under muscular contraction. It does not usually happen, unless at the moment extension has ceased; it is very rarely heard when pullies are used. After reduction, the shoulder resumes its roundness, and the elbow can readily be brought to the side. In this position, with the arm well supported, the limb must be maintained for not less than a month, to give time for the articular capsule to heal.

If, after reduction, you measure the two arms, you find a slight elongation of the injured one. By some persons this is supposed to be owing to the interposition of a portion of the capsular ligament between the articular surface; by others, to tumefaction of the cartilages: by some, to paralysis of the deltoid. This paralysis of the deltoid is not an unfrequent accident in luxation of the humerus. The dragging of the circumflex nerve may readily be supposed to account for it; the violent efforts sometimes made in reduction may also account for it. Paralysis of the whole limb sometimes occurs: in a few cases it has yielded to treatment, in others it has resisted all the means employed. It is a consequence of considerable injury to the brachial plexus. Laceration of the humeral artery has followed violent attempts at reduction. Desault occasioned it in reducing a dislocation six weeks old: a considerable tumor suddenly supervened under the pectoralis major, and soon filled the whole axilla. There may be œdema of the whole limb, caused by pressure of the head of the bone on the veins and lymphatics, but it usually yields upon reduction, and the application of a roller.

In these tendon-cutting days, other modes of reduction have been attempted. Weinhold, finding resistance on the part of the pectoralis major, cut through its tendon. (Zwanzig, de luxatione humeri et incisione aponeurosis musculi pectoralis ad cur. luxat. inveterat. Halæ, 1819.) The example has not been lost sight of. A few months ago, Dieffenbach, in an old case of dislocated humerus, finding, upon extension, that the muscles resisted, cut, subcutaneously, nearly all the tendons around the joint, reduced the limb, and the marvellous sequel is—it is said the case did well!

ELBOW JOINT.

By this term is usually understood a displacement of both bones of the forearm upon the humerus. But the radius may be alone dislocated, so as to lose its connection with the head of the humerus and the sigmoid cavity of the ulna.

The ulna appears to be scarcely susceptible of more than one kind of isolated displacement: in fact, the examples of it on record, with the exception of the case mentioned by Sir A. Cooper, are wanting in the details necessary to convince us of their reality. Indeed, when we regard the arrangement of the articular surfaces and ligaments, together with the nature of the motion at the joint, the difficulty of an isolated displacement of the ulna must be at once apparent.

In considering dislocation at the elbow joint, we shall first speak of the simultaneous displacement of both bones upon the humerus; second, of the displacement of the radius upon the humerus and the ulna; third, displacement of the ulna alone.

The situation of the elbow joint, between two comparatively long levers, (which may acquire, at their extremities, a very energetic power,) and much exposed to direct violence, dislocation must have been very frequent, did not many circumstances concur to prevent it: such as the extent of the articulating surfaces; the great strength of the olecranon; the power of the anterior and lateral ligaments, and of the muscular and aponeurotic masses, placed in front and at the sides of the articulation. There is yet another circumstance which explains the infrequency of dislocation at this joint; it is, that most of the causes which tend to produce the separation of the articular surfaces very commonly occasion fracture of one or more bones of the arm. For instance, in the case of a violent fall on the palm of the hand, a fracture of the radius alone, or of the radius and ulna, will deaden the violence of the shock, and prevent the displacement we are considering.

As in all hinge-joints, displacement at the elbow may occur in four directions—outwards, inwards, backwards, and forwards. But all are not equally frequent; the lateral displacements are opposed by the prominences and depressions which are presented by the humerus. The forward luxation is prevented by the projection of the olecranon, and can only be produced by a previous fracture of this process, or a great injury to, and destruction of, the soft parts. The backward displacement is the most commonly seen.

Backwards.—In this displacement, the superior extremities of the radius and ulna

pass behind the inferior extremity of the humerus. It is usually produced when, during a fall upon the hand, the forearm is found extended upon the arm. The weight of the body, increased by the impetus of the fall, is transmitted through the humerus to the forearm. If, under these circumstances, the two bones of the forearm obtain a solid support upon the soil, either directly or through the intermedium of the hand, their superior extremity, forming a plane inclined forwards and downwards, decomposes the action of the humerus, and transforms it into two powers, one acting in the direction of the axis of the limb, and tending to press the bones one against the other, whilst the other, perpendicular to the first, directs the extremity of the humerus forwards. Now, if this be strong enough to surmount the resistance opposed to the articular surfaces of this bone, by the border of the articular cavity of the radius, the coronoid process of the ulna, the anterior ligaments, the brachialis anticus, and biceps muscles, the humerus will necessarily glide from behind forwards, and descend in front of the bones of the forearm. Many surgeons are of opinion that this mechanism is the only one by which a backward luxation can happen. There can, however, I think, be no question, that in certain movements of forced extension, during which the forearm tends to form an angle projecting forward, a backward luxation may occur. If, then, the olecranon be not fractured, the humerus, transformed into a lever of the first kind, finds a point of support on the anterior-superior border of this process, and its inferior extremity, which represents the arm of the lever of resistance, acts as much more powerfully upon the anterior ligaments, and the brachialis anticus, and biceps muscles, to push them forwards, as the superior extremity of the bone, or the arm of the lever of the power, has itself greater length.

Whatever be the mechanism of this luxation, it is admitted to be always complete; because it does not seem possible that the rounded articular surfaces of the humerus should rest upon the edges of the radius and ulna, without passing farther, either forwards or backwards; in the one case making the luxation complete, in the other returning to its proper place. Though, as a general rule, such an admission may be made, yet it is certain that an incomplete luxation may occur even in an orbicular articulation; and we cannot, therefore, reject the possibility of such an occurrence at the elbow joint. In that case the inferior extremity of the humerus ruptures or violently distends the fibrous bands which strengthen the anterior part of the

joint, and raises or destroys the brachialis anticus and biceps muscles. The superior extremities of the bones of the forearm pass obliquely upwards between the posterior surface of the humerus and the triceps; and the border of the coronoid process is forced into the olecranon cavity of the humerus. The lateral ligaments and tendons, attached to the tuberosities of the humerus, are distended or destroyed. S. Cooper thinks the lateral ligaments are always destroyed. The annular ligament of the radius may remain uninjured, if the relation of the radius to the ulna be unchanged: this is shown by a dissection of Sir A. Cooper's. Petit (*Mal. des Os*) describes a case in which the brachialis anticus and biceps were ruptured, the extremity of the biceps escaping through a wound in the integument; the reduction was easily obtained, and the patient cured in six weeks. (See A. Cooper, S. Cooper, Abernethy, and others.) So far as I know there are only two instances on record, strange as it may appear, in which the brachial artery and the median nerve have been destroyed by this displacement. A more frequent complication is the fracture of one or more of the bones of the elbow.

In this luxation, the forearm, seen in front, appears shortened; it is flexed at an obtuse angle upon the arm, and any movement of flexion or extension can with difficulty be produced. This is owing to the state of tension in which the brachialis and biceps are maintained by the humerus, and to the biceps being removed from its proper course, by the projection backwards of the olecranon. We feel the olecranon above the tuberosities of the humerus. If the tumefaction be not great we can, occasionally, feel the extremity of the humerus projecting at the bend of the arm. If the patient be stout or fat these signs become much less evident. This is also the case where there is much tumefaction. It is in these cases that luxations are mistaken for contusions and fractures, and *vice versa*. This error is much more easily fallen into when a transverse fracture of the humerus is followed by a displacement forward of the superior fragment. In these cases all the signs of luxation may exist; and in the *Leçons Orales* of Dupuytren, (tom. iii. p. 396,) are examples of errors in diagnosis in such cases. Here, also, we find a mode of avoiding this error: "Seize a fragment in each hand, the thumb applied in front, and directed towards the fracture, and then attempt the reduction." This simple effort without any other means most frequently suffices, especially within the first thirty-six hours which follow the accident; the reduction thus perfectly operated, move the forearm backwards; if

there be luxation, the reduction persists; if there be fracture, the displacement will immediately re-appear. This sign, though unquestionably a good one, is certainly not so infallible as Dupuytren believed it to be. Berard saw a person who was killed by throwing himself from a second floor. The left elbow was the seat of considerable deformity; similar, in all respects, to that which is observed in luxation. Reduction was attempted and accomplished without much difficulty, though a cadaveric rigidity existed. A moderate pressure upon the forearm and arm, in opposite directions, was sufficient to produce a new displacement, which was accompanied by a slight crepitation. These manœuvres of reduction and luxation were reproduced several times with the same result. In this case it turned out that there was luxation in the forearm backwards; fracture of a part of the coronoid process of the ulna; fracture of a portion of the radius. Malgaigne says, whatever may be the projection of the olecranon, it is never further removed from the humeral tuberosities than in the natural state, if there be fracture; if there be luxation, the case is very different.

A dislocation backwards at the elbow, simple, and discovered early, is not a very serious accident; if it be mistaken, it soon ceases to be reducible. Hurteaux (Thèse, No. 255, p. 35, 1834,) states a case in which reduction was accomplished after twenty days. Boyer succeeded in a child of ten years in effecting a reduction at the end of six weeks. Sir A. Cooper has succeeded after several weeks. Leveille assisted Desault in a reduction after two months. But upon these exceptional successes we cannot count; usually the displacement will remain permanent. After a time flexion and extension increase, but they never attain the same freedom as before the injury; pronation and supination are almost abolished. Sometimes singular changes occur at the part when a luxation remains unreduced. In Beclard's museum was a specimen in which the unchanged articular surface of the humerus was received into an accidental cavity; and osseous productions were developed around the radius and ulna.

Though the projection of the head of the humerus through the skin be a serious complication, yet, in the case of Petit, and others of a similar character, the reduction was effected without the development of serious symptoms, and without altering the functions of the part. If the median nerve or brachial artery be destroyed, matters would assume a serious aspect: Boyer speaks of gangrene as the result. However, Abernethy used to mention a case of

this kind, in which the limb was preserved.

Treatment.—Soon after the occurrence of the accident this luxation is easily reduced; in fact, now and then a slight extension made upon the wrist, at the same time pushing the olecranon downwards and forwards, has proved sufficient for the purpose. If this be insufficient, the patient should be seated on a chair, the arm removed from the side, and directed obliquely forward; an assistant grasps the arm near the axilla, without compressing the biceps or triceps; another assistant gradually makes extension at the wrist; the surgeon, placed at the outside of the elbow, makes pressure in the bend with his fingers, whilst his thumbs press the olecranon downwards and forwards: and when this process arrives below the tuberosities of the humerus, he makes pressure almost directly forward, whilst the assistant who has been making extension flexes the arm. Sir A. Cooper advises a different course; the patient sits on a chair, the surgeon places his knee at the outside of the joint, and grasping the wrist, he draws upon the arm; at the same time he presses with the knee against the radius and ulna, so as to separate them from the humerus; the coronoid process is thus pushed from the posterior cavity of the humerus, and while this pressure is exercised upon the elbow, the arm being gradually extended, the reduction is accomplished.

When the dislocation is reduced, the motion of the forearm becomes easy; in the state of flexion the olecranon is found directly below the tuberosities of the humerus, about an inch removed from them. The joint should be enveloped with wet compresses, and the arm sustained in a sling: at the end of a week or ten days the joint should be gently used, so as to prevent ankylosis: the soft parts sometimes continue painful for several weeks. When the annular ligament has been destroyed, the radius retains a tendency to displacement for some time; and occasionally it is necessary to apply a bandage around the upper part of the forearm.

If there be much contusion, it may be necessary to defer the attempts at reduction, until by energetic local and general means the inflammatory action is subdued. In cases where the extremity of the humerus has injured or destroyed the soft parts, and projected through the skin, we must proceed to reduce, according to the mode I have described; the parts must then be kept perfectly quiet, and inflammation prevented by appropriate treatment. If the artery be ruptured, the brachial must be tied; in the first place, if there be at the same time great injury to the median nerve, it may be more

prudent at once to practise amputation of the arm than to expose the patient to the chance of gangrene. However, the cases on record are too few to enable us to erect a principle in this respect; and it must be remembered that in Abernethy's case the limb was saved.

Supposing reduction to be impossible (and such a case is mentioned by S. Cooper, as having occurred to Evans) a resection of the protruding portion of the humerus may be practised, and the patient may recover the complete use of the arm. Again, reduction may be accomplished, and may be followed by so much inflammatory action and tumefaction as to threaten gangrene; in such a case Frera caused a new displacement; resected a portion of the humerus: after three weeks the arm was saved, but it was ankylosed.

Dislocation forwards.—In this case the humerus passes down behind the radius and ulna. This displacement can scarcely happen without a previous fracture of the olecranon; still Delpech describes one case; the destruction of the soft parts was so great, that he said this fact was more calculated to confirm than to destroy the principle. I know no case of luxation accompanied with fracture of the olecranon, though much has been theoretically written on the subject. All I shall say, therefore, is, that when the reduction is effected the part should be treated in the same way that we shall recommend in treating of fracture of the olecranon.

A complete lateral dislocation of the bones of the forearm upon the humerus is very rare, partly owing to the considerable inequalities presented by the articular surfaces, and partly to the strength and thickness of the lateral muscles; it can only happen by two opposite lateral forces acting upon the arm and forearm at the same time. Petit describes two cases, (*Mal. des Os*, p. 239): the injury to the soft parts was so great that almost unlimited mobility was present. The lateral ligaments and the muscles attached to the tuberosities were destroyed; the limb was shortened by the bones riding. It is said that the shortening is less considerable when the luxation is inwards, the riding being prevented to the same extent by the greater projection of the internal tuberosity of the humerus.

When this kind of luxation is incomplete there is an increase in the length of the transverse diameter of the articulation; the forearm cannot be completely flexed; pronation and supination are almost impossible; the biceps, brachialis anticus, and triceps, have their course changed.

If the luxation be *inwards*, the muscles attached to the epitrochleus are raised and tense, and they bring the hand into a state of flexion and adduction: the muscles

attached to the epicondyle are removed from the radius at their superior extremity, forming a relief under the skin; the articular cavity of the radius corresponds to the pulley of the humerus: the small head of this bone may be felt through the soft parts.

In the *outward* luxation it is the articular cavity of the ulna which receives the small head of the humerus, while the radius and epitrochleus project; the muscles of the forearm and the inclination of the head present a disposition inverse to the former case. Lateral luxation, whether outwards or inwards, is a more serious accident than a luxation backward, because the injury to the soft parts is much greater. The inward seems to be more serious than the outward displacement, probably in consequence of the almost inevitable destruction of the ulnar nerve: but this opinion is based upon theory rather than fact. Supposing in lateral luxation the displacement to remain undiscovered, a greater latitude of motion is acquired than in the backward displacement.

Treatment.—Reduction is effected by means of moderate extension and counter-extension: whilst the arm is a little flexed, we push gently in opposite directions the humerus and the bones of the forearm. An examination should be carefully made to ascertain whether the radius have abandoned the sigmoid cavity of the ulna. Sir A. Cooper advises that, in each of these luxations, reduction may be obtained by extending the arm upon the knee: when recent, he thinks extension may be sufficient for the purpose; the biceps and triceps then bringing the articular surfaces in contact. In cases of lateral luxation, acute inflammation is always to be apprehended, and must be energetically combated. It is a safe plan to place the elbow in a gutter to insure quiet, and to apply lotions.

RADIUS.

The radius may abandon the sigmoid cavity at the superior extremity of the ulna; but the unfrequency of the occurrence caused erroneous ideas to be entertained about it up to the time of Durerney, (1751, *Traité des Mal. des Os*.) The superior extremity of the radius may be displaced backwards or forwards; the backward luxation is most frequent: it is almost always produced by a forced pronation: it may be occasioned by direct violence impressed upon the superior extremity of the bone, forcing it directly backwards to the outside of the olecranon. Boyer saw two cases. In Sandifort's 103d plate are two other cases, with ankylosis of the radius and ulna. Dupuytren also mentioned two cases which occurred in

his practice. Sir A. Cooper dissected a case of unreduced luxation of the radius: the head was found behind the external condyle; the anterior part of the coronary ligament was ruptured, as well as the oblique ligament, and the capsule was partially destroyed.

In this luxation the forearm is semi-flexed, the hand is prone, all attempts to produce supination are very painful, the biceps is tense, a depression is felt below the lesser head of the humerus, and the superior extremity of the radius projects at the posterior part of that eminence.

Treatment.—Reduction is accomplished by pushing the head of the radius from behind, forwards, whilst two assistants make extension. The assistant who is charged with extension, should, as the muscles yield, produce gradually as great an extent of supination as is practicable. The restoration of the natural form of the articulation, the possibility of producing easy extension and supination, are evidence that the reduction is complete. When the reduction is accomplished, pronation must be carefully prevented, and all motion should be avoided for a fortnight or three weeks; a compress should be placed behind the superior extremity of the radius, another along the arm and the upper part of the forearm, and secured there; the forearm should be slightly flexed, and the hand supine; an elbowed splint, extending from the palm of the hand to the lower third of the arm, should be applied.

The forward luxation of the radius upon the ulna is very rare; it happens when the hand is violently supinated, or when the superior part of the radius is forcibly pushed forward. It may happen, Sir A. Cooper thinks, in falling upon the palm, the forearm being extended upon the arm.

In this displacement, pronation is impossible; a very perceptible hollow exists behind the head of the radius. S. Cooper says that the superior extremity of the radius is carried in front of the external tuberosity of the humerus, upon the coronoid process of the ulna. Sir A. Cooper says the forearm is flexed, but cannot be carried to a right angle, nor completely extended. If we flex briskly, the head of the radius rubs against the anterior part of the humerus; the hand is prone; and if we attempt to rotate it, we feel the head of the radius move at the anterior part of the elbow; the annular and oblique ligaments, as well as the anterior part of the capsule, are distended and twisted.

Treatment.—To reduce this displacement the surgeon ought, whilst extension and counter-extension are making, gradually push the head of the radius backwards. When reduced, a bandage should be ap-

plied with moderate firmness, the forearm flexed, and the hand placed midway between pronation and supination. But reduction is sometimes very difficult: in two cases seen by Sir A. Cooper, it was impossible to reduce the radius; a third was not accomplished until the patient had fainted. In a fourth case, the patient was placed on a sofa, over the back of which the arm was passed; extension was then made, without the necessity of counter-extension, by grasping the humerus; the reduction was easily accomplished. Extension should be made on the radius only, the hand being supine.

It has been a matter of question whether those gradual displacements backwards of the head of the radius, which occasionally occur, should be considered in the general subject of luxation, or whether they should be considered as consequences of organic disease of the ligamentary tissues, in relation with the superior portion of this bone. Boyer believed it to be often produced by the forced pronation which nurses too often impress upon the arms of children, by raising them suddenly from the ground, by holding the wrist: but it may happen from contusions which have not elongated the ligaments. Sometimes we cannot refer it to any external cause. Usually, in these cases, we can distinguish tumefaction around the superior extremity of the bone; this swelling is painful, the hand remains prone, the fore-arm semi-flexed; gradually the head of the radius projects back more and more. Sometimes the affection is dissipated and motion resumed; sometimes it lasts long, the radius remaining displaced; then supination is impossible, and the radius may ankylose with the ulna; the inflammation may terminate in abscess or caries. To this disease the ordinary means of treating luxations are clearly inapplicable; leeching, quiet, blistering, are the appropriate means of treatment. As soon as the inflammation has somewhat subsided, an angular splint to the bend will serve to counterbalance the too powerful action of the flexors and pronators.

Sir A. Cooper states that the ulna is sometimes luxated backwards upon the humerus, without carrying with it the radius. The character of the limb is much changed by the turning inwards of the forearm and the hand; the olecranon projects backwards; extension of the arm is impracticable, unless the force applied be sufficient to reduce the luxation. This accident is not easily detected; the signs are projection of the ulna, and the inward rotation of the forearm. In the museum of St. Thomas's Hospital is a good specimen of this accident—a long time had elapsed before reduction was effected. The

coronoid process of the ulna was received into the posterior or olecranon fossa of the humerus; the radius rested against the external condyle, and had formed a small cavity, which received the head and allowed of its rotation. This accident was caused by a violent shock upon the inferior extremity of the ulna, by which this bone was suddenly forced upwards and backwards. Luxation of the ulna alone is more easily reduced than when both bones are implicated. The reduction is best accomplished by flexing the forearm over the knee, and drawing the forearm downwards: the reduction is then easy.

THE RADIO-CARPAL ARTICULATION.

Dislocation of the wrist was formerly considered to be very common: standard works contain descriptions of backward, forward, and lateral luxations, and yet, says Dupuytren (*Leçons Orales*, tom. 4, p. 162) there does not exist a single undoubted observation of this injury. His dissections and observations led him to regard the greater part of the pretended luxations as fractures of the inferior extremity of the radius. Pouteau and Desault had also detected this error in diagnosis. Dupuytren was not strictly correct in his opinion, though nearly so. Sir A. Cooper, who usually associates with his descriptions a series of facts, alludes only to a single case of dislocation of the wrist, and does not consecrate many lines even to general remarks on it; but I shall presently mention four other cases, one from Cruveilhier, one from the *Journal de Médecine*, tome 39 (Thomassin,) one from Malle, and one from the *Lancet*, copied from a German journal, as proofs of its occasional occurrence, and there is a specimen in the museum of St. Bartholomew's Hospital.

The extreme rarity of the luxation is explained by the small extent of the lever represented by the hand, and the great strength of the joint, and the support obtained before and behind by tendons. In falls upon the hand, either the weight of the body is directed upon the inferior extremity of the metacarpal bones, or on what is called the heel of the hand; in the first case the efforts are concentrated upon the carpal articulations, causing displacement of those bones; in the second, they are directly transmitted to the radius, which gives way.

Feeling satisfied that the opinion I have expressed of the unfrequency of this luxation is correct, it may be said, how is it to be reconciled with the opinions of persons of much more extended experience than my own? I believe the explanation to be simply this: that these displacements have been described theoretically.

Malle describes a case where a drunken soldier threw himself from a second-floor window into the street. It seemed probable that his right arm was extended, to break the fall, and that its palm first came to the ground. He was conveyed to the hospital insensible; the right wrist was carefully examined, and the conclusion came to was, that the radius was fractured. The hand was extended upon the forearm, and the carpo-metacarpal region seemed much, shortened: at the anterior part of the articulation a remarkable projection was observable; the radius and ulna were prominent posteriorly; the fingers were flexed, and the flexor tendons very tense. Symptoms of concussion existing, it was thought to be a favourable moment for attempting reduction, and it succeeded. The patient died in three days, from cerebral disorder. After death the wrist was examined: the parts were infiltrated with blood, the anterior ligament of the capsule was ruptured, a little sanguinolent serum was contained in the joint, there was no fracture of the radius, the first range of carpal bones was very moveable.

In Cruveilhier (*Anat. Path.* liv. 9) is an example of luxation of the wrist without fracture of the radius; in other words, a luxation backwards of the forearm upon the hand. (Fig. 1.) In that case the forearm appeared shortened, it formed with the hand nearly a right angle; extension was impossible; flexion could be carried farther than is seen in the figure, the inferior extremities of the radius and ulna projected under the integuments. The superior extremity of the carpus is on a plane anterior and superior to the extremities of the bones of the forearm. Now this fact is in formal opposition with the descriptions usually given: it was a dislocation forwards; that is to say, the inferior bones were in front of the superior. The ordinary description of forward dislocation is the following: "the hand is fixed in extension proportioned to the degree of displacement, the fingers are more or less flexed," &c. Should we therefore regard Cruveilhier's as an exceptional case? I think not; because in mechanics, properly speaking, there are no exceptional cases; the same causes ought always to produce the same effects. I cannot conceive that a dislocation caused by a fall on the back of the flexed hand, can have, as a result, a dislocation with extension of the hand.

As to backward dislocation, I mean that condition in which the carpus is completely behind the bones of the forearm, I can scarcely conceive dislocation to be possible without fracture; for in that case the repulsion of the soil is entirely directed upon the inferior extremity of the radius. On the other hand, I can scarcely conceive the possibility of fracture of the radius as

Fig. 1.



an effect of a fall on the dorsal surface of the flexed arm. Complete lateral dislocation I believe to be impossible, or rather, I would say, I know no instance of it.

Whatever the luxation may be, the movements of the hand are arrested, and rotation of the radius is impossible, in consequence of the destruction of ligaments, distension of tendons, and injury to the soft parts. It is always a very serious accident, from the effects of which recovery is always doubtful: motion at the part is incompletely restored; the inflammation which is developed may pass into a chronic state, and end in white swelling; or, if ill treated, may turn into abscess of the joint, or even gangrene of the hand: it is especially when the radius has violently contused or pierced the skin, that these accidents happen.

Treatment.—It is necessary, in these cases, to proceed to reduction as soon as possible, to combat, by energetic local and general means, the inflammatory action which is sure to be manifested, and not allow the patient to move the hand until the pain and tumefaction have disappeared. If, as in the case of Thomassin, the bones protrude through the skin, and prevent reduction, resection is the best means of removing the difficulty; but if the injury of the soft parts be great, immediate amputation must be performed. If the dislocation be forward, an assistant seizes

the hand near the wrist, and extends it until the carpus is brought to the level of the joint; he then flexes it, while the surgeon grasps the wrist, and with his thumbs pushes down the carpus to its proper place: reduction is usually accomplished without difficulty. In dislocation backwards, the assistant having made extension until the carpus is disengaged, brings the hand into forced extension, whilst the surgeon presses on the bones of the forearm until reduction is accomplished. As to luxations outwards or inwards, I know no instance of them, and I shall, therefore, not further allude to them. After reduction, a fracture apparatus should be applied, and the part kept motionless.

REPORTS OF CASES.

By H. M. HUGHES, M.D.

Physician to the Surrey Dispensary.

PHTHISIS.—Of the thirty cases of this disease of which I have retained some notes, among the far larger number that have been under my care during the last year, sixteen have proved fatal, and probably not less than four died a very few weeks after their removal from my superintendence. The whole number of

deaths occurring among my dispensary patients during the year was forty-two. More than one-third, therefore, arose from this terrible malady; a proportion considerably larger than generally exists in England, or the metropolis. Nothing can, of course, be deduced from so insignificant a number of cases; but as Mr. Farr has, I think, (for I have not the work now by me to refer to,) stated, in the first report of the Registrar-General that in those districts in which the deaths from phthisis, as compared with the general mortality, have been numerous, the gross amount of deaths has been small, I would suggest, that an increased proportion of deaths from phthisis, in relation to the general mortality of a given district in one year as compared with that of another, may probably hereafter be found to co-exist with a healthy period.

Of the thirty cases now under consideration, twenty were males, and ten females. Of the males, two were under twenty years of age; ten were between twenty and thirty; and eight were above thirty. Of the females, two were below twenty; five between twenty and thirty; and three above thirty. Of the sixteen deaths ten occurred among the males, and six among the females, while under my care. The ages at which death took place were 7, 16 (2), 18, 20, 21, 22, 26, 27, 29 (2), 34 (2), 44, 48, and 52.* The two cases noticed in the table as "cured," were examples of the disease in the incipient form, as, at least, appeared to be indicated by the history, the general symptoms, and the physical signs. The treatment was followed by complete suspension, though probably not by the absolute removal, of the disease. It is, however, obvious, that when the latter cannot be effected, it is no trifling advantage to be able, in many cases, to induce the former.

Having written a paper on the "Physical Diagnosis of Incipient Phthisis" in a late number of the *Guy's Hospital Reports*, and intending, in a short time, to add some observations on the treatment of the early stages of the disease, I shall not now enter upon either of these most interesting and important subjects. I cannot, however, refrain from expressing my assured conviction of what I have there asserted, that ap-

preciable dulness on percussion is very far from being an early physical sign of phthisis; that when it is clearly distinguishable below one or both of the clavicles, or in the acromial regions, the complaint has generally advanced too far to be effectively treated, and that it not very unfrequently passes through the whole of its stages without any dulness whatever. I lately attended a man in the last six weeks of his illness, whose chest, during the whole of that period, was more than usually resonant on percussion, but whose lungs were found, on examination after death, to be thickly and universally studded with tubercles, in all the stages of crudity, maturity, and softening. The diagnosis was, however, in this case, and in most others may be formed, from other physical signs combined with the general symptoms. The auscultatory signs of the latter stages of the disease are now so well established, and so generally known, as to need no illustration; and, on the treatment, I have nothing to add to what has already been frequently said before, excepting to express my decided conviction, derived from clinical observation and reflection, that a general tonic mode, both medical and dietetic—"the beef-steak and porter system" of treatment, as it has been disparagingly termed by a high authority—offers in many cases the most rational hope, and is, both theoretically and practically, the best means of securing an indefinite prolongation of life.

Two circumstances of some practical importance, which have lately occurred to me, in the last stages of phthisis, may be, perhaps, advantageously noticed. I know of no symptom which, in this disease, has been more distressing to the patient and, to myself at least, has proved more irremediable, than the constant pricking and smarting of the throat, arising probably from ulceration of the larynx and epiglottis, and so much increased by the act of swallowing, as sometimes to prevent food of any kind being taken into the stomach. I had tried, without effect, a great variety of topical applications, both internally and externally, for this troublesome affection, in a woman, aged 22, whom I saw only during the last two or three weeks of her life, when, rather with the view of trying something fresh, than with the hope or expectation of relief, I ordered *very hot* water to be

* Of these, three among the males, and two among the females, were instances of acute phthisis.

externally applied to the throat, in the same way in which it has been found so efficient a remedy in acute inflammation of the larynx and trachea. I was much surprised and gratified by the result: the pricking and severe smarting were speedily removed, and the patient swallowed with ease and comfort; and, though the annoyance frequently returned, a repetition of the application was, till the death of the patient, always effectual in relieving her. The other circumstance to which I have referred occurred in the same patient. She had been greatly teased, and her little remaining strength had been already much reduced, by a more than usually severe and obstinate diarrhoea, for which I had prescribed chalk and opium, sulphate of copper, acetate of lead, kino, catechu, &c., and ordered opiate injections and suppositories, without any good effect. The few days of life that yet remained to her, would have been not merely curtailed, but rendered wretched, by the continued and exhausting drain upon her feeble frame. I therefore resolved to try the means which I had frequently found so advantageous in dysentery; and though I expected little or no benefit from their employment in such a case, I ordered three or four leeches to be applied to the verge of the anus. The effect very much surprised me: the diarrhoea was checked at once, did not recur, and the patient passed the last three or four days of her existence in comparative comfort. I have never, either before or since, applied either of these remedies in similar cases, and am therefore unable to say that the relief which so very decidedly followed their employment was not merely a coincidence. That relief was, notwithstanding, so marked, and appeared to result so immediately from the applications, that I have thought it right simply to mention the facts, and to hint that, in the examples of these affections in which other remedies fail, the means proposed are at least worthy of trial. Only one of my cases occurring at the Dispensary during the past year, possesses sufficient interest to require particular notice in these reports.

Caroline Aborn, a weak delicate woman, and of light complexion, aged 22, came under my care July 20, 1839. She had for some years been troubled with debility, combined with pain and weakness of the loins, but had never

suffered from hæmoptysis or cough of any severity or constancy, till about three weeks before I saw her. The general debility appeared to have been connected with irregularity of the function of the womb. Her parents were alive and healthy, and her brothers and sisters had not presented any indications of phthisis. When first visited she was pale, feeble, and exceedingly nervous. She complained of oppression of the breathing and frequent cough, accompanied with rather copious mucous expectoration; the tongue was pallid, clean, and moist; the pulse frequent, small, and weak; and the catamenia irregular. Accurate examination of the chest by auscultation and percussion was impossible, in consequence of her great excitability and of the tendency to faint, which was always induced by the operation. From the imperfect investigation that was alone practicable, I was never able to detect any dulness on percussion, or any more decided indication of phthisis than a universally diffused bronchial rattle, with deficient expansion of the upper portion of the chest, and some slight flattening below the clavicles. After the use of counter-irritants, emetics, and sedatives, combined with the preparations of iodine, for some weeks, the affection of the chest was much lessened; her cough almost ceased, and she took tonics with great advantage to her general health. About the end of September she was attacked with bronchitis, in a more acute form than she had hitherto suffered. Leeches below the clavicles, blisters upon the sternum, and small doses of antimony, blue pill, and opium, removed the soreness of the chest of which she complained, but had little or no effect in relieving the cough. She soon began to decline rapidly in strength; her pulse increased in frequency, and it was evident that she was fast sinking, and her end approaching, when, in the middle of the night of October the 9th, after feeling as well or rather better than for some days or weeks before, a not very violent fit of coughing was immediately followed by excessive dyspnoea, accompanied with great prostration and flatulence of the stomach and bowels, but without any pain, either temporary or permanent, local or diffused. I was not acquainted with the circumstance till noon, and saw her at 2 P.M., Oct. 9th,

up to which time the symptoms continued with little diminution or variation. I found her lying in the semirecumbent position, turned about half way to the left side; the face and body covered with clammy perspiration; the extremities cold; the respiration hurried and anxious, and with a scarcely perceptible pulse. But little examination of the chest was practicable or justifiable. It was, however, evident that the right side had become exceedingly resonant on percussion, that the resonance extended below the sternum, and that the respiratory murmur was scarcely audible, and appeared distant. The state of the left side could not be ascertained. The escape of air into the pleura, and speedy dissolution, were of course predicted. Sinapisms were applied to the chest and feet, and ammonia was administered internally; but she expired at 10 A.M. the next morning, about 34 hours after the supervention of the alarming collapse.

Inspectio Cadaveris, twenty-four hours after death, (made by Mr. Nettlefold, the apothecary of the Institution, as I was unfortunately engaged).—The chest alone was examined. On cutting through the ribs, a rush of air escaped from the right side. The right lung was compressed to about one-fourth its natural size, by air which occupied the remaining portion of the pleural sac, and which had pushed the heart and mediastinum to the left of the sternum. There was no fluid or any other evidence of inflammation of the serous membrane. The apex of the right lung was adherent to the pleura costalis, and was studded throughout with miliary granulations, with a few opaque tubercles interspersed between them. In the mammary region was found a small cavity about the size of a nutmeg, which, though near the surface, did not communicate with the pleural sac. In consequence of the lungs not being inflated, the opening from the air cells was not discovered. On the left side the lung was congested, and sprinkled throughout with tubercles, generally immature, but in a few instances just beginning to soften. The pericardium was healthy, and the heart small and flabby, but otherwise free from disease.

The gentleman who made the preceding inspection for me, afterwards mentioned a similar, but more remarkable case of the same kind, which, as

it never has been made public, with his permission, I append to this paper.

A remarkably fine young man, aged 19, of light complexion and flaxen hair, whose parents were alive and healthy, but one of whose brothers had died of phthisis, without any previous indisposition, and having never been troubled with cough, was suddenly attacked with hæmoptysis. In about a fortnight he was sufficiently well to remove to the coast for change of air. He had remained there with benefit to his general health for three weeks, when he was suddenly attacked with violent dyspnœa, and died in ten hours; only five weeks after the first decided indication of disease of the lungs.

Inspectio Cadaveris, twenty-four hours after death.—Percussion elicited a remarkably clear sound on the left side, while on the right side the sound was dull, especially at the posterior part. On dividing the cartilage of the fifth rib on the left side, air escaped from the chest with a whizzing sound. Two-thirds of the pleural cavity were filled with air; the superior and posterior third of this side of the chest being occupied by the collapsed lung. The pleura was itself free from disease, excepting some adhesion connecting it with the apex of the lung. The whole of this lung was sprinkled with tubercles, some of which were so near the surface as to produce an elevation upon the pleura pulmonalis. The right pleura was firmly adherent both to the parietes and the pericardium. The apex of the right lung contained some immature tubercles; the inferior lobes were simply, but considerably congested. The smaller bronchial tubes in both lungs were much coloured by injection; those of larger size were pale and natural. No ulceration or laceration of the pleura, giving rise to the escape of air, could be detected after minute examination; but a blowpipe was not employed for the purpose of discovering it. The pericardium was firmly adherent to the sternum, the cartilages of the ribs on the right side, and to right pleura pulmonalis, but the internal surface was free, and the sac contained rather more fluid than is usual. The heart was flabby and thin, and was pushed upwards and to the right, as far as the external adhesion of the pericardium would permit.

ON THE INFLUENCE OF THE
LEFT BRONCHUS,IN CLOSING THE DUCTUS ARTERIOSUS AT
BIRTH, AND SOME CORRELATIVE CIR-
CUMSTANCES IN PATHOLOGY AND COM-
PARATIVE ANATOMY.

By T. WILKINSON KING,

Curator of the Museum of Guy's Hospital.

[For the *London Medical Gazette*.]

THE explanation of the shutting up of the foramen ovale appears to be well understood, but the contraction of the ductus arteriosus is, I think, under somewhat different circumstances. The first branches of the pulmonary artery increase in relative size shortly before birth, and the first respirations render their circulation still more free: at this time, perhaps, the communication between the pulmonary artery and aorta becomes less direct (more oblique) than before; but the changes here mentioned have

never seemed to me adequately to explain the rapid disappearance of the arterial passage. There is, I believe, no other account of this event in the records of physiology.

I had long entertained a different opinion; but it was not until lately that other considerations presented themselves, apparently rendering my view more reasonable, and somewhat more than curious; and even now I quite feel that it should rest with the reader to consider whether so theoretical a matter comes within the limits of his useful or proper studies.

It is in connection with more extended views of the circulation, which I hope to take some part in illustrating, that this inquiry may derive importance. It is in the pathology of congenital deformities that the opinion advanced seems to be requisite as well as illustrative.

It is in a few curious facts of comparative anatomy that the opinion obtains its most remarkable corroboration.

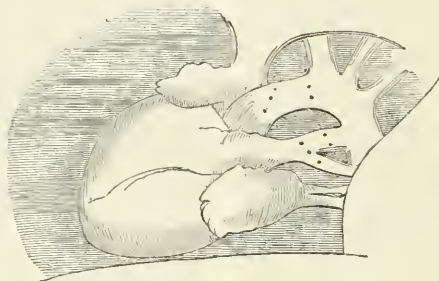


DIAGRAM NO. 1.—Shewing the relative position of the ductus arteriosus. This is a sketch from a dissection at the fourth month of foetal life, and may serve to

explain the general relation of the great air tubes (as represented by dotted lines) with the artery.

A very cursory reference to the larger parts immediately about the ductus arteriosus, as seen at the period of birth, will be sufficient to make this view intelligible. The pulmonary artery at its point of bifurcation gives off the temporary tube which the aorta receives near the summit of its descending portion. The division of the trachea occurs close behind the middle of the arch of the aorta, and the left bronchus curves downwards to the left into the lung, before the descending aorta, beneath the ductus arteriosus, and behind the left pulmonary artery. Now the close packing of these parts in the unborn child is, if any thing, even more remarkable than in after periods; and to this state of things I

would refer the consequences of the first respirations. In foetal life the air tubes contain only a little fluid; they are probably but partially expanded, while the circulation is nearly single and equable, the auricles pretty equally full at all times, and the ventricles equally powerful. The chest continues of limited capacity; the diaphragm high, and the lungs confined about the heart.* We

* I am scarcely disposed to think that no motion takes place in the respiratory muscles of the child before birth, but I rather suppose that along with the common movements of the foetus there is also some and perhaps frequent exercise of the well-developed thoracic muscles, especially towards the end of uterine life. On this point I may add, that some cause remains to be found for the manifest proportional increase of the right and left pulmonary artery, as well as decrease of

may now reflect upon the principal effects of the first inspiration: a general expansion is made, which is never again to have its commensurate collapse; and, although that fulness of the lungs (as to air) which may be regarded as necessary and permanent, be not obtained till later, it seems pretty evident that the first inspirations must have a far larger share than any others in effecting this condition. Now the trunk becomes straighter; the neck is no longer bent forwards on the breast, and the trachea is elongated; the diaphragm, and with it the heart, is considerably drawn down, while the lungs are generally expanded, but most particularly outwards;* and one particular result of all these changes, I imagine to be, that the left bronchus is rendered more full and tense, and also raised at the same time that the ductus arteriosus is drawn down with some force, and perhaps with some disposition to elongation. In fine, it is to the sudden and intimate cross contact of these two tubes that I would mainly attribute the closing of the blood-vessel, which is in a manner bent over the bronchus, and has also a more oblique direction given to its communication with the aorta. I think that the appearances on dissection are corroborative, although I confess that the study of the parts,† with which we are concerned at different periods before and after birth, affords no positive proof of the opinion explained; nor have I been able to make the experiments in the way of injection and inflation more conclusive. The following, however, from pathology, are, I think, some farther corroborations of the view I suggest:—

First, if the pulmonary artery be closed at its origin only (congenitally) the arterial ductus remains open after birth, seemingly by the force of the current from the aorta, which is filled by the two *communicating* ventricles; but if the pulmonary orifice be open, even in a very small degree, the duct becomes as thoroughly closed as ever, although the

two ventricles still communicate freely; that is to say, that no force from the aorta, short of the entire current claimed by the pulmonary arteries, is sufficient to keep open the ductus arteriosus; and this there is abundant evidence to prove. I ask, is it not reasonable to infer some extraneous cause of the disclosure of the duct, when it has become fully developed with the mouth of the pulmonary artery closed or open in any degree, and yet contracts at birth in all cases except where the mouth of the pulmonary artery is impervious?

Secondly, if again there be a simple transposition of pulmonary artery and aorta, the duct remains open; but if, in a like case, there be but a very small communication between the ventricles, the ductus closes. In cases of transposition the auricles communicate, and the power of the left ventricle being too great for the pulmonary circulation only, it assists to fill the arterial duct, which is thus prevented from contracting; but if any communication exist between the ventricles, their power is necessarily more nearly equalized, and the duct closes, notwithstanding that a considerable and direct distending force must be in operation within.

I shall not dwell upon the various interesting circumstances relating to this inquiry, which comparative anatomy supplies. Some animals seem to change from an aquatic life to an air-breathing state, as it were; from a fetal to a post-natal existence, every day—as the frog, turtle, and crocodile; and in these we find various substitutes for arterial ducts, with indications of alterations in the course of the blood, according to the state of the lungs. The insertion of a slip of the diaphragm into the apex of the heart of the crocodiles (with a communication between the aorta of the right and left ventricle), seems peculiarly to connect the circulation with the respiration in these animals. The passage of an aorta over both bronchi in all the instances mentioned, and an apparent provision to send the most aerated blood upwards, are also to be remarked. Some of the chelonians have also a diaphragm inserted into the apex of the heart. I conclude, too, that serpents may share in this varying distribution of the arterial fluid, according as it is freely or scantily aerated. One example may serve to illustrate my meaning, if not to establish my opinion. The

the arterial duct, which slowly occur prior to birth: respiratory movements may be equal to this.

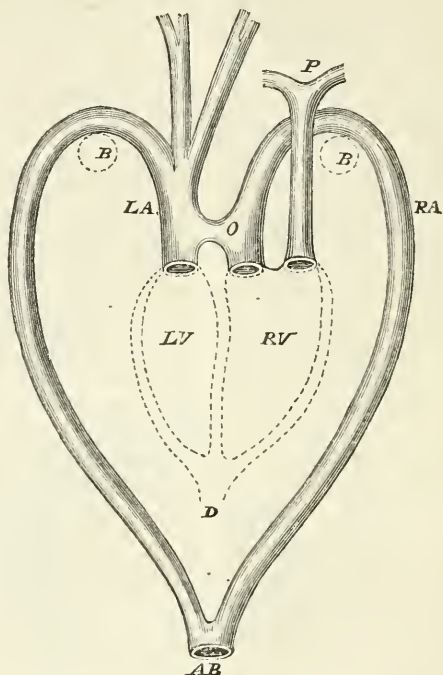
* The sternum is at the same time advanced.

† A series of these gradations are to be seen in the museum, as well as illustrations of all the statements which follow. The state of animals which are born blind, and in whom the arterial duct closes but slowly, may be thought to favour the view maintained above, but a conclusive proof is still to be found. It may, perhaps, occur in the rare instances in which the duct continues freely open in after life, when the situation of the bronchus shall be noticed in such cases.

case of the alligator is, I suppose, as follows:—

The origins of the great aortæ (L A and R A) are dilated and elastic reservoirs. Relaxation of the diaphragm and its cardiac insertion (D), with col-

lapse of the lungs, produces an excess of dark blood in the right ventricle (R A), which can only find ready exit by the right aorta (r A); the pulmonary arteries (P) being more or less obstructed at this time. Now I imagine the



great aortic arch crossing the bronchial tube (B B) on either side, to be relaxed, and to transmit the blood more freely; and also I deem it a reasonable inference that a part of the dark blood in the right aorta (r A) will pass by the opening (O) into the left aorta (L A).

With a free inspiration the heart must be supposed to be drawn down, and (from the dissection of those parts *in situ*, in the alligator of Jamaica) I venture to assume that the great arches are rendered more tense and angular, and less free, by contact with the bronchial tubes (B B). I even conclude, that when the dark blood prevails in the right aorta, it may even cause a reflux into the left from the abdomen, by the union of the two (A B) at that part.

The object of all this seems to me to be closely comparable to the arrangements in the human fœtus, by which the better blood goes to the head and arms, while

the worse passes to the abdominal parts and depurating organs; and analogous also to those changes in the child at birth, by which the currents are permanently diverted.

NOTICES OF ŒDEMA PULMONUM OCCURRING IN PARTURIENT WOMEN.

To the Editor of the Medical Gazette.

SIR,

I do not recollect to have met with any work in which œdema pulmonum is set down, and treated of as one of the accidents happening during the parturient state; nevertheless, it does happen occasionally, and that now we have diagnostic means of ascertaining its existence, I think special attention should be drawn

to it. Soon after I began practice I met with a case, which I thus notice in the rough notes of my diary of cases:—

“Nov. 1st, 1827.—Mrs. A.: protracted labour; strong uterine action; but narrow pelvis; first child thirty-four years of age; healthy woman. During labour considerable dyspnœa; accumulation of mucus in throat; much distress; fourteen hours in full labour; lost little blood; constant tickling cough.”

“Nov. 16th. — *Rale* in throat has continued, as also short distressing cough, with much general debility. Child doing well.”

Again, in 1837, I find the following note, after the brief statement of a somewhat similar case:—“In the progress of severe and protracted cases of labour, I have repeatedly met with the development of a loud bronchial and tracheal *rale*; it is very loud and very distressing, and I have heard a patient express great fears, from its similitude to the “dead rattles.” I have tried many things for it: nothing relieves it so completely as a little warm fluid, such as common tea, or beef-tea. I never like to hear it: the cases have more than once required the forceps in consequence of their duration; the breathing is more or less difficult.”

Again, 1838, I find the following notice in my diary of this affection. “At page 8 (of Note Book G) are a few remarks on a loud mucous rattle in parturition, to which I subjoin the following case, and wish it to be regarded as a continuation of these remarks. In more than one case of protracted labour, when this symptom appeared, I have observed unequivocal marks of an œdematous state of the lungs. A young woman (Mrs. M'G—, æt. 22) fell in labour of her first child. She had been for some time in a feeble and cachectic state, with considerable anasarca swelling of her feet, forearms, and occasionally of her eye-lids. During her labour, which, from irregular uterine action, was protracted, she complained of oppression of breathing, occasioning much distress; a *single* frequent hard cough, and the rattle in her throat. These symptoms went on increasing during the labour; she became exhausted, and I applied the forceps. The cough and oppression of breathing assumed a very alarming degree after delivery, and I shared in the fears of her friends that she was dying; more par-

ticularly as she lost a considerable quantity of blood.

“On listening to the sounds of breathing, I heard the subcrepitant *ronchus* very extensively, and but very feeble respiratory murmur any where: at some parts, particularly the left lower part of chest, there was much dulness on percussion. These symptoms continued for eight days. She found relief from a mixture of squill (syrup of) with peppermint-water, and anodynes. In time she quite recovered, and has borne a child since, without any bad symptom. I have also noticed slighter cases of œdema pulmonum in parturition: they have always, with one exception, been in feeble women. In one case the woman was so full that I ventured to bleed her. I do not know that she had any immediate relief from it. In none do febrile symptoms happen. Anodynes afford the speediest and most permanent relief. My anodyne in such cases is the following:—

R. Træ. Camphoræ Comp. ʒviii.; Solutionis Muriat. Morph. ʒj. M. sumat sæpe ægra gut. x. in frustulum sacchari urgente tusse; et Cochlearia minima duo ex Infus. Linî, h. s.

In conclusion, I would remark that none of the women were subject to cough or dyspnœa: these came on during the labour.—I am, sir,

Your obedient servant,

ALEX. J. HANNAY,

Prof. of Physic, Andersonian University.
Glasgow, June 25, 1840.

VACCINATION.

To the Editor of the Medical Gazette.

SIR,

WILL you allow me to express the gratification I experienced on perusing your excellent article on the Vaccination Bill. Without dwelling on any other part, there is one remark made there which I think might be reiterated with advantage to many members of our profession, “The plain truth is, that there is no proof whatever that with cow-pox any other disease can be communicated, while all facts and probabilities militate *in toto* against such an opinion.” Subscribing heartily to this doctrine, I much regret that the contrary opinion is held and promulgated by many practitioners,

not only to the discredit of vaccination generally, but at the risk of damaging their own reputation as well as that of others, and with the certainty of exposing themselves to much needless annoyance. Whilst, on every account, it is a manifest duty to employ lymph from healthy children only, it is neither wise nor fair, when no other cause for a disease can be assigned, to attribute its origin to vaccination from an unhealthy source. A medical friend in this place, (much my senior, and whose authority consequently is much weightier than mine), lately pronounced on an eruptive case, that it arose from the child having been vaccinated from an unhealthy subject. I have been astonished at the number of persons from whom I have heard of this child "turned into a most horrid spectacle;" and I find that the caution of parents (always in the extreme on this point) has of late been aggravated to a very annoying extent. It is not enough to be able to answer for the parents of the child, but I have had inquiries put to me respecting the preceding generation; and if the fancies and fears of the idle and wealthy are to be sanctioned and encouraged, it will be soon expedient that practitioners in this place should furnish themselves with the genealogy of all the clodpoles in Gloucestershire, together with a record of the integrity of their constitutions, and a voucher for the purity of their morals. Not long since I had a lucky escape: I was asked to vaccinate a child, but from some cause neglected to do so for some weeks; in the interim porrigo manifested itself, which proved both severe and obstinate, and I missed the credit of making a "horrid spectacle," as I learnt from the father, who said he did not know how to account for it, *especially as the child had not been vaccinated.*

While on this subject, I wish to inquire if there is not a typographical error in the second line of the Statistical Notices of Small Pox, which appeared in your last number but one, but of which there is no notice of error in your last number? * It is true that the orthographical difference between vaccinated and unvaccinated is very slight, but its importance is every thing with respect to the statistics in question. I have been, at times, tempted to ask you to insert an examination of the various statistical notices of small-pox which have

appeared in your volumes, in order to determine what questions they may be expected to solve, what is their relative importance, and what deductions may be fairly drawn from the statements, but have been afraid of entering on so tender and irritable a topic. I am, however, convinced that a small-pox statistic is apt to overrate the value of his researches; and to him would be peculiarly applicable the observations which Carlyle, in his pamphlet on Chartism, has applied to the political statistic: "To him it seems he has extracted the elixir of the matter, on which now nothing more can be said. It is needful that you look into his said extracted elixir, and ascertain, alas, too probably, not without a sigh, that it is wash and vapidity good only for the gutters."—I am, sir,

Your obedient servant,

HENRY COLES.

Cheltenham, July 6, 1840.

ANALYSES & NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

An Essay on the Treatment of some Affections of the Prostate Gland.

By R. A. STAFFORD, Esq. &c. &c.
London: Churchill. 1840.

OF late years much attention has been given by pathologists and practitioners to the diseases of the genital and urinary glands and cavities, as well as to the fluids that are generated or deposited in them. Amongst the former, the prostate gland has been examined anatomically and pathologically, with much care and considerable success, by those who, in this country, have very recently investigated the history of that organ in its morbid condition. The author of the present opusculum is one to whom, however we may differ from him on some points, we must give the credit of having been at much pains in the collection of facts, and in the contrivance of instruments and other means for the cure or alleviation of prostatic diseases. It is now several years since Mr. Stafford published a volume in which he described and illustrated by cases and drawings a new method of treating urinary obstructions, depending on diseased urethra or enlarged prostate gland, by puncturing, so as to make free passage from the bladder along the

* We are not aware of any error.

penis. Since then his attention seems to have been much directed to the subject, and new difficulties have been met with and new contrivances been adopted. Of those contrivances it is the object of this work to lay before the public a short statement. The point of practice more particularly handled by the author is the removal of that form of prostatic disease in which either the body or the middle lobe is enlarged, and projects inwards or upwards, so as to form a barrier inside the sphincter urinae; over which, in extreme cases, the urine can with difficulty be forced by the strongest efforts (of which Mr. S. gives a remarkable example at p. 13). Of the treatment of those extreme cases the author has spoken in a former work, above alluded to, in which he describes his method of puncturing and perforating the obstructed lobe of the gland; but cases less aggravated he seems to find manageable without any cutting operations. The following short extract will indicate sufficiently the general character of the author's method:—

"If the third lobe (of the prostate) has only partially been enlarged, I have then employed remedies, such as iodine, iodide of potassium, belladonna, &c., locally, always in a diluted form, and combined or uncombined with other substances as the urgency of the case might require. If it (the third lobe) be so large that it will not yield to the application of those substances, I have in some instances punctured it with advantage; and when its volume has been so great as to block up the neck of the bladder and cause retention of urine, I have then been under the necessity of perforating it." He then speaks more particularly.

"The power of iodine and iodide of potassium in reducing glandular swellings is well known." "It was this circumstance that led me to think it might be advantageously employed to reduce an enlargement of the prostate gland." "I at length" (after various unsuccessful trials and other means) "thought of a simple mode of applying it by charging a bougie at its point with the iodine, iodide of potass, or any other substance, and then dipping it in the melted tallow, so that a coating might be formed on it. By such a method, I have been able to introduce any application I might desire up to the prostate gland, without touching the surface of any other part of the urethra. The bougie having reached

the desired spot, its point is allowed to rest on the diseased part, when the tallow gradually melts, and brings the iodine or iodide into contact with it, and by drawing the instrument gently backwards and forwards the necessary friction is produced." He then subjoins useful cautions and explanations. "At first, I have found it necessary to employ even anodynes, such as belladonna, opium, hyoscyamus, &c., to quiet irritation and pain; when these have subsided, I have begun carefully by introducing the iodide of potassium, in the proportion of one grain to the drachm of the unguent. cetacei, and increasing it as the patient could bear it. I have then gone on with 2, 3, 4, 5, and even as far as ten grains or a scruple to the drachm, according as the case required. After this I have applied iodine to it; half a grain, 1, 2, 3, 4, and even more grains, in the same manner. The surgeon who applies it can only judge of its effects." He then subjoins sixteen cases in illustration of his method: of these, five appear to have been cases of general enlargement of the gland, successfully treated with iodic and anodyne remedies, either by the anus, in the shape of suppositories, or by the urethra, in the manner above described. Six were cases of diseased middle lobes, treated nearly in the same manner as the former. The five remaining cases were examples of puncturation of the gland in the author's peculiar manner, or of perforation through it into the bladder. The author concludes his Essay thus—

"The object I have had in view has been to point out a set of cases of prostatic disease, where relief might be obtained, and to put my professional brethren in possession of the means by which this desirable object might be accomplished. I would not presume to say that the treatment I have recommended is adapted to all cases, although I have reason to believe that, in many, the remedies I have employed will be found very effectual. My own experience is much in favour of the treatment I have employed for enlargement of the prostate gland, and its third or middle lobe. It now only remains, therefore, to be confirmed by a more extended experience than one individual has it in his power to acquire."

To conclude, we have read Mr. Stafford's work on the Prostate Gland with considerable interest: the great

frequency of such diseases, their difficulty of management, their extreme inconvenience, when not urgently dangerous, render every attempt to improve their treatment worthy of encouragement, and entitle the practitioner who, with a view to such improvement, ventures out of the beaten road of practice, to our liberal consideration in any event; and, should he obtain any useful new results, to our cordial thanks for his services, and our sincere congratulations on his success. With those feelings we close Mr. Stafford's volume. We have no personal experience of those portions of his plan or means that are new, but his results, as given in his Cases, strongly testify to their efficiency; and we see no reason to doubt that similar results, in the hands of other distinguished surgeons, will shortly be found to substantiate their utility.

The Principles of Botany, structural, functional, and systematic; condensed, and immediately adapted to the use of Students of Medicine. By W. HUGHES WILLSHIRE, M.D. Edin. &c. London, 1840. 12mo. pp. x. and 232.

DR. WILLSHIRE, who is the lecturer on botany at the Charing-Cross Hospital, has drawn up this work, not from any deficiency of elementary works on botany, but because "he thought he could present to the student of medicine a more condensed view of the first principles of the science, combined with circumstances, and illustrated in a manner which would more immediately interest him, than was done by any mere single text-book with which the author was acquainted."

There are five divisions in the work. The first treats of the anatomy of plants; the second, of their morphology; the third, of their physiology; the fourth, of their pathology; and the fifth of systematology.

Under the head of physiology, our author gives an account of germination, nutrition, respiration, generation of heat and light, secretion, colour, taste and odour, irritability, growth, and generation.

After giving an account of the Linnæan classification, Dr. Willshire explains the natural system of Decandolle, and arranges the officinal plants of the London College in accordance with it. For instance, under the head of *Papaveraceæ*, he gives the botanical characters

of the group, and terminates the account thus:—

"*Geographical Relations.*—Europe and North America chiefly, though they are found elsewhere, as in China and Japan for instance.

"*Properties.*—Narcotic. This deleterious property resides in their juices, their seeds being oily, but not possessed of any soporific powers.

"*Officinal Plants.*—*Papaver rhœas*; *Papaver somniferum*." (p. 169.)

The following extracts will afford our readers some notion of the varied information diffused through the work:

"We have stated that a certain degree of heat is necessary for germination to ensue, and it is generally said no seed will germinate at a temperature below the freezing point of water: Edwards and Collin say, not below 44° Fah.; Goeppert allows to 37° Fah. The subject requires further investigation in relation to some cases, as in Nova Zembla, for instance, where plants are to be seen in flower in a soil whose highest temperature at the time is only 34° Fah. According to the last-mentioned observer, no degree of cold can destroy the *vitality* of a seed, if it be perfectly dry, or have absorbed no moisture.

"The degree of ascending temperature that seeds will bear is various; some have borne that of 235° with impunity, whilst 113° has been fatal to some; much depends, however, on the hygrometric relations of the heated air and seed: fluctuations of temperature are generally detrimental." (p. 173.)

"The Beet-root and Plane-tree root contain much saccharine matter, and in that obtained as exuding from the bark of *Fraxinus ornus*, called Manna, a principle named *Mannite* is found. According to Decandolle, Manna, occurring in the form of tears, is caused by the injury of insects on the bark, but that in masses by natural exudation, in consequence of a superabundance in the interior of the plant." (p. 101.)

"The *Fucus vitifolius*," says Bonpland, "removed from a depth of 190 feet in the ocean, offers a curious phenomenon in vegetable physiology. Experiments made by divers render it probable that beyond a depth of ninety feet the penetration of light is very little, notwithstanding which this *Fucus* was of as fresh a green as the young leaves of our Vine or Grasses."

Dr. Willshire's book will be read with

advantage by those who intend to study botany thoroughly; but we hope and believe that the directors of medical education in Blackfriars are not so *exigents* on the subject as might be conjectured from the appearance of so deep an elementary treatise. He who has eight or ten years to dedicate to professional education may study the physiology of plants, but the student who is limited to thirty months ought to make short work of botany.

Primitiæ Floræ Sarnicæ; or an Outline of the Flora of the Channel Islands of Jersey, Guernsey, Alderney, and Serk, &c. By CHARLES C. BABINGTON, M.A. &c. London, 1839. 12mo. pp. xvi. and 132.

The following extract will gratify some of our readers:—

“I will now give a short list of rare English plants which are frequent in these islands.

Matthiola sinuata.
Helianthemum guttatum.
Erodium moschatum.
Lotus angustissimus.
L. hispidus.
Herniaria glabra.
Polycarpon tetraphyllum.
Bupleurum aristatum.
Cicendia filiformis.
Orobanche cærulea.
Scrophularia scorodonia.
Bartsia viscosa.
Trichonema columnæ.
Cyperus longus.
Knappia agrostidea.
Cynosurus echinatus.
Asplenium lanceolatum.

“The following list includes the plants that have been found in Jersey and Guernsey, but have not been included in the British Floras (as English), although several of them are now found to be not uncommon natives of England.

Ranunculus ophioglossifolius.
Erucastrum incanum.
Sinapis cheiranthus (sands near Penard Castle, Swansea, Mr. Jos. Woods).
Polypala vulgaris, *β. oxyptera* (Sussex, Mr. Borrer; near Liverpool, C.C.B.)
Arthrolobium ebracteatum (Scilly Isles, Miss White).
Myriophyllum alterniflorum (Shropshire, Rev. A. Bloxam).

Hypericum linarifolium.
Callitriche platycarpa (common in England).
Centauria isnardi.
Hypochaeris glabra, *β. balbisii* (Kent, Mr. Borrer).
Senecio erraticus (Buttington, Montgomeryshire, C.C.B.)
Echium violaceum.
Orobanche barbata (on ivy in many places).
Linaria pelisseriana.
Salvia clandestina.
Armeria plantaginea.
Atriplex rosea (common on the British coasts).
A. deltoidea (near London, C.C.B.)
Orchis laxiflora.
Neottia festivalis.
Allium sphærocephalum.
Potamogeton plantagineus (common in Britain).
Scirpus pungens,
Festuca rubra, *β. sabulicola* (British coasts).

Bromus maximus.
B. diandrus, *β. rigidus.”*

Besides Serk, there are two other islets belonging to the channel group, called Helm and Jethou; not to mention a rocky mound named Crevichou, which is connected with Jethou at low water. This last contains twenty-two species of plants; the number in the whole book being 848.

Mr. Babington's book will be a useful addition to our British Floras, and a pleasant companion to those who are inclined to spend a few weeks in the Channel Islands.

MEDICAL GAZETTE.

Friday, July 10, 1840.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”
 CICERO.

MEDICAL REFORM IN FRANCE.

THE anomalous condition of the medical profession in these islands, on which we touched in our last article, is by no means confined to them.

On the other side of the Straits of Dover, as well as here, the old maxim of *dat Galenus opes* is falsified by con-

stant experience. It seems that in France, as well as in the British Islands, the demands of the nation for medical advice have outstripped the progress of national wealth. Hence the share of hard cash which falls to each practitioner is small indeed; and since in our profession, beyond any other, a smart appearance must be kept up, it is to be feared that there also genteel penury is the lot of too many hard-working practitioners.

It may seem curious that the French still call for medical reform; nay, it is promised; but they, too, have their procrastinating friends, and must wait. On the 18th of April, a writer in the *Gazette Médicale* spoke with joy of the approaching reform; "*les augures sont favorables; un vent de réforme et d'amélioration commence à souffler dans nos parages*"—and so forth. It does not clearly appear, however, in what the proposed reform consisted, except in a change respecting the *agrégés*, who were in future to enter upon the duties of their office immediately on their appointment, and to exercise them nine years instead of six; and in an increase of the number of examinations to be gone through by candidates for the doctorate.

On the 13th of June, the same correspondent writes to his *cher confrère*, the editor, in a tone of jocosé despair. He finds that another session is to pass away without the promised law, and declares that in future no mention shall be made in his letters *de la fable législative dont on berce éternellement notre souffreteuse bénignité*; adding, that if a bill for medical re-organization should be presented to the Chambers, he will repeat the news after all the other journals, and after having assured himself of the truth of the fact by hearing, seeing, and touching; till then he will keep silence, and have neither confi-

dence in promises, nor belief in rumours; let who will, expect or hope.

The French, we may observe, have already got much of what our reformers desire. They have united medicine and surgery, and they have only three towns where doctors are created, namely, Paris, Strasburgh, and Montpellier. What, then, is wanting? Something to make the pot boil. M. Cousin, indeed, threatens to add Rennes to the three Faculties, but we do not know whether this has actually been done.

Another correspondent of the *Gazette Médicale*, who signs himself A. M. P., discusses the question whether it is advisable to add to the number of Faculties, and answers it in the negative.

As his letters, (contained in the Nos. for May 23, May 30, and June 6,) throw much light on the state of the profession in France, and even tend to elucidate the social problems connected with it throughout Europe, we shall probably gratify our readers by considering some of his facts.

He informs us, that many physicians and several medical corporations have expressed the opinion that the three Faculties of Paris, Montpellier, and Strasburgh, are not enough, and that it would be well to add one, two, or three to the list. Lyons, Bourdeaux, and Nantes, are among the additional towns proposed; these, as well as the other places suggested, being all noted for their intellectual culture, wealth, and population.

A. M. P., on the other hand, were it not that he respects vested rights, would rather abolish one or two of those actually existing; but before he gives his reasons for this, he thinks it right to set forth what a Faculty is.

A Faculty, then, is a College of Physicians founded by law for a two-fold purpose; the first is that of teaching

medicine completely; the second is that of conferring the degree of doctor of medicine or surgery, after examinations. Now, to fulfil this double object, it is requisite, first, that the establishment should contain all that is wanted to teach the exercise of the art: thus, it must possess at least thirteen theoretic professorships, namely, those of natural philosophy, chemistry, natural history, anatomy, physiology, external pathology (or surgery), internal pathology (or medicine) operations, therapeutics and materia medica, pharmacy, midwifery, hygiene, and forensic medicine; besides three practical professorships, being those of clinical surgery, clinical medicine, and clinical midwifery. Several of these chairs require more than one professor. Every Faculty, therefore, must have a great number of professors; and these, again, must have plenty of assistants, under the name of *agrégés*, *chefs de clinique*, *prosecteurs et aides d'anatomie*, *aides de chimie*, *de botanique*, &c. All this forms an expensive array.

Secondly, the additional matters required are equally costly—namely, a library; theatres of anatomy and chemistry; a cabinet of natural philosophy; a botanic garden; and a museum of anatomy, surgical instruments, &c.

Thirdly, a Faculty must necessarily be situated in a town capable of supplying all these requisites, and above all, sufficiently populous, and sufficiently supplied with hospitals, to afford the patients and the subjects required for instruction.

Hence, concludes the objector, a Faculty is one of the most expensive, nay, the most expensive, of all the institutions designed to teach physic; and, therefore, if the whole cost is to be defrayed by the pupils, they must resort to it in great numbers. Yet, taking the present number of medical students in France (which every one allows to be more than sufficient for the wants of the

population), there ought to be only one Faculty, if the pupils are to defray the whole expense; and consequently, the greater number of these establishments in France, the more must be given by the State for their maintenance. New Faculties should, therefore, not be formed, unless they are absolutely necessary, or would produce social advantages not to be obtained by a lighter outlay, and so great as to compensate for the charge.

Lastly, there are very few towns in France where a new Faculty could be established.

It may be objected, says the correspondent of our contemporary, that our scheme for a Faculty is too large, and that we make it expensive by a superfluity of chairs. To this he replies, that the number he proposes is made absolutely necessary by the circumstance of the Faculty conferring degrees as well as teaching physic. If it did the latter alone, a smaller number of professorships would suffice, as the deficiency might be supplied elsewhere; but a faculty which examines candidates in every branch of medical knowledge must also teach them.

The legislature and the University have always been of this opinion, and the same idea is to be seen in the bill of the 20th of last April, for the establishment of a Faculty at Rennes. It is true that the bill projects the establishment of only eight theoretical, and two practical chairs; but the difference is apparent, not real. Thus, professorships of natural philosophy, chemistry, and natural history, are not founded; but then the minister hopes, that the Faculty of Sciences, which he is founding simultaneously at Rennes, will supply the want. Again, although there is only a single professor to teach hygiene and forensic medicine, the acknowledgment is made, that both these medical sciences must be taught in a Faculty. Lastly, although the bill

makes no mention of a professorship of operative surgery, can we approve of this? Is it not rather a blameable deficiency? So far A. M. P. We have often expressed ourselves against the wanton multiplication of courses and lectures, which distract the student's attention, and too often imbue him with about as much of each subject as might be learned from Pinnoek's Catechisms; but, of course, a greater number can be attended in France, where the student has four years for his professional education, than here, where he is too commonly limited to two years and a half. We think, with our French contemporary, that hygiene is a subject of great, nay, we would say of primary importance. We should be glad to see it more studied in England. It is too extensive to be made a mere fraction of the course on forensic medicine; and, though this would be better than nothing, we would rather see botany suppressed, and hygiene installed in its place. Or, supposing botany to be retained, a valuable improvement would be effected, by making the examination in botany, chemistry, and the art of reading prescriptions, a preliminary to the two years and a half now devoted to medical education. Time would thus be gained for the more important subjects, and the pupil's mind would not be harassed synchronously by so great a variety of studies.

The physicians who urge the establishment of new faculties, allege in favour of their scheme, that before the Revolution there were eighteen. To this the correspondent replies, that the eighteen were far too numerous, and had of themselves sunk to nine in 1789; and that the three established by the National Convention, in 1794, have been found quite sufficient during the forty-six years which have since elapsed.*

* Two schools of medicine were created by the consular government in 1803; but they were in the conquered provinces, one being at Mayence, and the other at Turin: and, moreover, they were not on the large basis of the present faculties.

Are these Faculties overworked? Not a bit of it. Their members are never obliged to work double tides, to toil at night, or to shorten the examinations in order to get through more of them. The Parisian faculty has always created the greatest number of doctors, but has never spent more than two hours and a quarter a day in this duty; and the services of each professor are required only twice, or at most thrice, a-week. Nevertheless, there are six examinations, each of the first four lasting three quarters of an hour for each candidate, while the fifth and the thesis take an hour. It is quite clear, too, that of the three existing Faculties, the Parisian one creates more than half the doctors, and that the expenses of the others exceed the fees which they receive. At Strasburgh, indeed, the maximum of doctors who graduated in any one year from 1823 to 1838 was 57, and the minimum 14; in 1839, the number was 23. Hence, if the faculty at Strasburgh were not useful in other respects, it might easily be dispensed with as a fountain of doctors. The average number who graduated at Montpellier was from 120 to 130 annually. So far, therefore, A. M. P. has proved his case; new Faculties are not required, from the old ones being overwhelmed with examining candidates for the doctor's degree. The other reasons for and against new institutions of this kind we will discuss in a future article.

MR. TOMES AND MR. OWEN.

To the Editor of the Medical Gazette.

SIR,

IN the commencement of the year 1838, when a student at King's College, I began to investigate the structure of the teeth, especially human teeth, under the impression that nothing definite was known upon the subject: nor was there, in England, at this period. Before I had been long engaged in this pursuit, many novel facts presented themselves, and these, as they

became known to me, I mentioned to Dr. Todd, and to many of my fellow students, and at the same time shewed the preparations that led me to them. In May of the same year, having prepared many specimens (I might say hundreds), I shewed those I deemed most interesting to Mr. Bell, who expressed himself highly pleased; and as he considered the subject to be quite new, he recommended that I should write a paper as soon as possible, and proposed that he should present it to the Royal Society before the termination of the meetings of that season. At the same time, Mr. Bell inquired if I knew Mr. Owen. I did not know Mr. Owen at that time, but felt anxious to do so; and Mr. Bell very kindly gave me a favourable letter of introduction to him. I did not, however, call with my introduction for some days; when I did, after waiting for some time in the room into which the servant had shewn me, Mr. Owen came, and brought with him his microscope. He had seen Mr. Bell, he said, since I had, and had been told of my intended visit and its purpose—that of shewing him some of my preparations. I had with me some specimens prepared for the microscope; these were examined, and much praised; but Mr. Owen told me, that though the subject was new in England, yet it had been considerably studied by continental physiologists. Mr. Owen also shewed me two curious sections of teeth, which, he said, he had prepared. They were curious from being large, and so thick that they could scarcely be seen through the transmitted light, and were on pieces of glass scarcely larger than themselves; they were fitted also into a black paper case, of curious appearance. Mr. Owen, at this time, advised me to draw up an account of my researches, and offered to give me any assistance in his power, in the way of obtaining for me specimens to examine: and upon this occasion I left his house with several rare teeth, but upon the condition that I should give him a section from each. Afterwards, my visits to Mr. Owen were pretty frequent, and, for several successive visits, Mr. Owen acted up to his promise, and furnished me with valuable specimens for examination. He expressed a strong wish that I should examine fossil teeth, and he furnished me with such. The teeth of the *Megatherium* and *Toxodon* I may mention as amongst the number of those furnished to me by Mr. Owen. Shortly after, however, he declared his intention of following this branch of the subject himself, and it was not long before he told me that he had taken up much of my valuable time, as he said, and that he would not trouble me to make any further examinations. At the same time, he advised that

I should not publish on the subject till some translation of the foreign investigations had appeared. Shortly after I became acquainted with Mr. Owen, he mentioned my name in his summer course of lectures at the College of Surgeons, in connection with the above subject, as having confirmed Retzius's views, and said he had good reason to believe that I had gone further into the subject than the Swedish author. A day or two after the lecture alluded to, Mr. Owen, as promised, had some sections of teeth (most of which I had given to him) exhibited in the library of the College to any who might think proper to attend. Mr. Owen was absent at the time the specimens were shewn, but Mr. Clift was there, and gave the necessary explanation to those who attended.

The two curious specimens before spoken of were exhibited, and Mr. Clift gave of them the following history:—He said, that Retzius had visited him some months before, and had given to him these two identical specimens; that he, Mr. Clift, was very busy at the time, and put them by in a drawer; and that it was only by accident that he found them a few days before that time, and had given them to Mr. Owen.

Had Mr. Owen's advice as regards publishing been in accordance with that of any of my friends, I should no doubt have adopted it; but such was not the case. Every other person, who was in any way acquainted with my proceedings, strongly urged me to publish, and especially as it became almost impossible for me to pursue the subject farther during that year, in consequence of other and, to me, more important engagements. A paper was, therefore, written, and presented to the Royal Society by Mr. Bell. An examination of the proceedings of the Royal Society for that year will tell, that the paper was received on the 14th of June, 1838, and read on the 21st of June, 1838. The paper was entitled, "On the structure of Teeth, the vascularity of these organs, and their relation to bone." (The paper has since been published in the *MEDICAL GAZETTE*, No. 585.) The paper was referred by the Royal Society to Mr. Owen, and he advised that it should not be published in the Transactions. This I should not have taken any account of; but, in September of the same year, Mr. Owen read a paper before the British Association upon the same subject, containing many of the same facts, and, as I believe, in some parts descriptive of some of the specimens which I had prepared and given to him, and all this without even mentioning my name. By this same paper Mr. Owen claims considerable credit as confirming

the views of Retzius—a claim to which he has no right whatever. I see, in a letter of Mr. Owen's to Mr. Nasmyth, published in the *GAZETTE* of last week, that Mr. Owen reports himself as the first in this country who investigated the structure of the teeth. If you, Mr. Editor, will take the trouble to refer to dates, the facts will appear, that Mr. Owen has no claim to priority either in the examination of dental structure, or in detailing the results of an examination, but that there is great reason for believing that he got the idea of working at the subject from me and my preparations, none of which were reserved from his inspection.

Your most obedient servant,

T. TOMES.

41, Mortimer-street,
Cavendish Square, July 1, 1840.

UNIVERSITY OF LONDON.

BACHELOR OF MEDICINE—FIRST EXAMINATION.—1840.

Forty-eight Candidates presented themselves for Examination. Monday, July 6th.—Morning, 10 to 1.

ANATOMY AND PHYSIOLOGY.

Examiners, Mr. KIERNAN & Dr. SHARPEY.

1. Describe briefly the form and structure of the sacrum, its articulations with the neighbouring bones, and its mode of ossification; name the muscles to which it gives attachment.

2. What motions take place in the following joints, and to what classes of joints do they respectively belong? 1st. The articulation of the bones of the forearm with those of the carpus. 2d. Of the carpal bones with each other, and with the metacarpal bones. 3d. Of the metacarpal bones with the phalanges. 4th. Of the phalanges with each other. Enumerate the muscles of the forearm and hand, classifying them according to their actions; and mention the order in which the tendons are placed round the wrist joint, commencing with the flexor carpi ulnaris, and proceeding outwards.

3. Describe the parts seen on the surface of a transverse section of the thigh about its middle, and their relative positions. Mention the names of the vessels which usually require ligature, and the situations in which they are to be found.

4. The integuments being removed for a handbreadth above, and to the same extent below the occipital protuberance, and as far forward as the anterior edge of the mastoid process, describe the muscles, blood vessels and nerves, thus brought into view, with their relative position.

5. Describe the dissection required to show the course and distribution of the gluteal and ischiatic arteries, commencing at the integuments of the gluteal region, mentioning the parts cut through or exposed in the order they are met with, and describing the arteries and their branches, with their relations to the adjacent parts.

6. State the leading facts which serve as proofs of the circulation of the blood.

Afternoon, 3 to 6.

1. Describe the parts met with in the successive stages of the dissection of the inguinal region. Describe the inguinal canal, and its contents in the male, and in the female, and the alterations occasioned in the canal by hernia. How is the cremaster formed, how are its fibres arranged, and what varieties does it present? What is contained in the canal prior to the descent of the testis, at what period does the descent take place, and what changes take place in the canal after the descent? How is congenital hernia formed, and in what respects does it differ from the ordinary form of external inguinal hernia.

2. Describe the parts met with in dissecting, from the integuments to the median plane of the tongue, that space which is bounded above by the lower jaw, below by the os hyoides, anteriorly by the median line, and posteriorly by the pharynx.

3. Describe the structure of a lymphatic gland. What has been ascertained as to the mode of origin of the lymphatic vessels?

4. What is seen on the surface of a vertical section carried through the cerebrum, cerebellum, tuber annulare, and medulla oblongata, in the median plane?

5. Name the nerves distributed in whole or in part to the following muscles, viz., sterno-thyroidens, deltoides, pectoralis major, serratus magnus, trapezius, coracobrachialis, gluteus maximus.

6. Describe the course and distribution of the laryngeal nerves, and state what is ascertained respecting their functions.

7. Mention the differences in structure between the circulating organs of the fetus (at birth) and those of the adult.

Tuesday, July 7th.—Morning, 10 to 1.

CHEMISTRY.

Examiner, PROFESSOR DANIELL.

By Experiment.

The solutions of two salts will be placed before you, marked A and B, with appropriate tests labelled: apply the tests, describe the phenomena which take place, and explain the constitution of each salt.

1. In what does the boiling of a liquid essentially consist; and how is the tem-

perature of a liquid connected with its boiling?

2. According to Dulong and Petit the boiling point of mercury is 360° centigrade: to what degree of Fahrenheit's scale does this correspond?

3. Take two similar thermometers, and, on a calm clear night, place one of them on wool fully exposed to the aspect of the sky: place the other similarly on wool under the cover of a tree;—what would you expect them to indicate after the lapse of a short time? and to what cause would you ascribe the effect?

4. I have measured 21.5 cubic inches of a gas standing over mercury; the level of the mercury within the jar is half an inch higher than without; the height of the barometer is 29.74 inches, and the temperature 52° Fahr.,—what is the correct volume at standard pressure and temperature?

5. State and exemplify the laws of definite and multiple proportions.

6. What is meant by the statement that 40 parts by weight of potassium are equivalent to 8 parts of oxygen and 16 of sulphur; and how would you illustrate the meaning by the constitution of sulphate of potassa?

7. Describe the constitution, mode of production, and principal properties of ammonia.

8. Describe the constitution of nitrate of ammonia, and explain by symbols, and by a diagram relating to volumes, the changes which it undergoes upon being exposed to a temperature a little above its melting point.

Tuesday, July 7.—Afternoon, 3 to 6.

MATERIA MEDICA AND PHARMACY.

Examiner, Mr. PEREIRA.

1. Describe the usual mode of procuring sulphuric ether. Explain the chemical changes which take place during the process. State the atomic composition of alcohol and ether.

2. Give a botanical description of *Digitalis purpurea*, especially describing the leaves and flowers. State to what class and order, in the sexual system of Linnæus, this plant belongs, and what is its natural order. Describe its effects and uses, point out the cautions to be exercised in the employment of it, and mention the dose of its powder, its infusion, and its tincture.

3. State for what particular cases the most frequently employed cathartics are respectively adapted or unsuited, and why? Mention what are the appropriate purgatives for febrile complaints; alvine obstruction, with great irritability of stomach; inflammation of the urinary organs, and

sluggishness of the colon: and what purgatives are improper in diseases of the rectum, in uterine irritation, and after operations about the pelvis and abdomen?

4. With what substances is scammony usually adulterated, and how is their presence to be demonstrated? What are the physical and chemical characters by which the goodness of *elaterium* is ascertained? How would you proceed to detect the presence of tartaric acid in suspected powder of citric acid? By what physical characters are the leaves of *cynanchum argel*, found in Alexandrian senna, distinguished from the *cassia* leaflets?

5. Describe the effects both of medicinal and poisonous doses of opium; and point out the peculiarities of its narcotic operation? Mention the appropriate remedies in poisoning by this substance?

6. What are the best disinfecting processes for the sick chamber, and for uninhabited buildings?

Tuesday, July 7.—Afternoon, 3 to 6.

STRUCTURAL BOTANY AND VEGETABLE PHYSIOLOGY.

Examiner, Professor HENSLOW.

1. Explain the terms axil, bract, tendril.

2. Define an arillus, and mention examples where it occurs.

3. Describe the cellular tissue, and its various modifications.

4. Describe the specimens marked

1. [*The common Campanula.*]

2. [*Virginian stock.*]

3. [*Pod of the common pea.*]

5. Give sketches of the principal forms of vernations.

6. Explain the structure and functions of pollen.

7. What is meant by vegetable irritability and sleep; and what are the external stimuli affecting these properties?

WESTMINSTER HOSPITAL.

CASES ILLUSTRATIVE OF THE CEREBRAL SYMPTOMS INDUCED BY DISEASE OF THE KIDNEYS.

To the Editor of the Medical Gazette.

SIR,

If the following cases be deemed worthy of a place in the MEDICAL GAZETTE, their insertion will oblige, sir,

Your obedient servant,

FREDERIC BIRD, A.L.S.

Clinical Assistant to the Westminster Hospital.

Eliza Glynn, æt. 32, was admitted into the Westminster Hospital, under the care

of Dr. Hamilton Roe, labouring under a form of dyspepsia, connected with bowel irritation, for which ordinary remedies and carefully regulated diet had been employed with advantage, and she was returning to a state of health, when she became suddenly attacked in the following manner:—A few minutes after having retired to bed, she was seen by the nurse apparently sleeping, and on attempting to rouse her it was found that all efforts to do so were quite ineffectual, and I was then called to see her, at which time she was lying on the back, breathing calmly, but rather more slowly than usual; countenance, which had previously been flushed, was remarkably pale; the pupils of natural size, acting freely under the stimulus of light; the pulse quiet, regular, but feeble, 96; the limbs motionless, with the exception of the legs being two or three times slightly moved, just sufficiently so indeed to point out the absence of paralysis; the skin cool and moist; chest expanding freely; respiration quite unaccompanied by stertor; heart's action natural. On inquiry it was found that her bowels had been freely evacuated during the day, and that the urine had been passed just before the attack. After the lapse of an hour and a half, during which time she remained in the same state of complete insensibility, the face had resumed a cadaveric pallor, the respiration was still slowly but naturally performed, excepting that occasionally the angle of the mouth on the left side was puffed out during expiration; the pulse rather more full, and 92; skin rather increased in temperature. A catheter was passed, but not more than 3ss. of urine drawn off, which, when tested by heat and nitric acid did not appear to be albuminous; but from the smallness of its quantity its exact characters were not satisfactorily determined. Hitherto the only treatment employed consisted in the application of a large blister to the back of the neck; but the pulse having now become more full, and the respiration more frequently accompanied by the puffing of the lips, the temporal artery was opened, and about ʒx. of blood abstracted. The blood at first flowed slowly, but shortly afterwards passed out with considerable force; the pulse became more frequent, and she was observed to swallow the saliva and mucus, which had accumulated at the back of the throat, but not the slightest consciousness returned. She continued nearly in the same condition during the night, both urine and fæces escaping involuntarily from her: fearing, however, an accumulation, a catheter was again passed, and about three ounces of rather high-coloured urine was removed, which, on the addition of nitric acid, became turbid from the precipitation of a thin cloud of albumen.

On re-examining the extremities the left ankle was discovered to be very slightly oedematous. No appreciable alteration occurred in her symptoms, with the exception of three or four slight convulsions, affecting the upper extremities, and she rather quickly sunk; the whole seizure having occupied rather more than 18 hours.

Section cadaveris, fourteen hours after death.—*Head*: The brain was perfectly healthy, nor had any effusion taken place into the cavities. *Chest*: The lungs healthy, with the exception of a few old adhesions at the apex of the left, together with some puckering of the pulmonary tissue. The heart of natural size; the aortic valves opaque, and the anterior curtain of the mitral considerably thickened and shortened. *Abdomen*: The left kidney much enlarged, flabby and pale; its upper portion containing cartilaginous deposit, and its lower irregularly granulated and mottled. The right kidney was much smaller than that of the opposite side; its proper tunic scarcely separable, and its whole surface granular, and presenting several spots of increased vascularity, almost resembling ecchymosis; the cortical substance much diminished in thickness, and contained two small cysts; the mucous membrane of the small intestines considerably injected, particularly at the lower third of the ileum.

The case I have just related is, perhaps, more interesting, from its being one in which the diagnosis of disease of the kidneys rested almost solely upon the peculiarity of the cerebral symptoms to which it had given rise, than from any supposed rarity of occurrence; instances of renal affection terminating in disorders of the brain being far from unfrequent, but in such it commonly happens that the previous history of the patient, together with the presence of the ordinary symptoms of disease of the kidneys, leave but little difficulty in the way of arriving at a correct diagnosis. In the present example, however, no such general means were afforded, but so strongly were the characteristic cerebral signs of this affection marked, that no difficulty could be entertained in recognizing it as dependent upon renal disease. The principal indication relied on consisted in the combination of great cerebral disturbance, with the perfectly quiet pulse, the unaffected pupil, and the remarkable pallor of the face, constituting, in fact, the peculiar symptoms described by Dr. Addison, in the Guy's Hospital Reports, and which I have often had the advantage of seeing pointed out by him. The only point of difference observed in the present instance was the occurrence of convulsions; but these, when first remarked, were so slight as scarcely to

be regarded otherwise than as proving the absence of paralysis, and subsequently they could be considered only as premonitory of dissolution. The occurrence of convulsions, however, is by no means uncommon in the progress of renal disease, and, in the third and fourth forms of cerebral disorder, described by Dr. Addison, they constitute one of the most prominent characters. A case illustrative of this point, as well as shewing the manner of attack peculiar to another form, occurred in the person of Edward Ferry, who was recently admitted into the Westminster Hospital, under the care of Dr. Bright. His occupation had been that of a cab-driver, and he had been long accustomed to the free use of spirits. Four months prior to his admission, he first observed that his legs became oedematous, and his face frequently puffed; his urine shortly after began to decrease in quantity, the lower extremities becoming distended by anasarca, and respiration difficult and painful. He then applied for relief; at which time, in addition to congestion of the lungs and bronchitic inflammation, he was the subject of confirmed renal disease; the urine being scanty, high coloured, and loaded with albumen. In a few days (during which time he had improved) he began to complain of occasional dull pain in the head, with tendency to sleep; his manner becoming sluggish, and evincing much stupidity: these symptoms, after the lapse of three days, gradually passed into a semi-comatose state, in which he frequently became convulsed. Under the treatment adopted he rallied, but was again similarly attacked; the convulsions occurred with greater frequency, and assumed a more violent character; coma, accompanied by the peculiar hissing stertorous breathing observed in these forms of cerebral affection, ensued; and he died. On dissection, no lesion of the brain could be detected, but both kidneys were found in the state of granular degeneration.

In this case, independently of the cerebral signs, the presence of albuminous urine and anasarca left no doubt of the existence of renal disease; but in that before described, no suspicion of this kind was entertained until the supervention of the cerebral disorder, which became the earliest indication upon which the diagnosis of disease of the kidneys was founded; and instances of this kind are by no means uncommon,—a fact now established by the observations of several physicians of rank and experience. Two cases, closely resembling the first which I have detailed, occurred lately in the private practice of Dr. Roe, who has kindly permitted me to refer to them. In both of these no suspicion of renal mischief had been before admitted,

but the peculiarity of the quiet stupor, the unaffected pupil, together with the absence of stertor and the other ordinary symptoms of cerebral affection, immediately convinced Dr. Roe of the existence of disease of the kidneys; an opinion in the one case verified by dissection, and in the other by the presence of albumen in the urine.

Westminster Hospital,
June 22, 1840.

METHOD OF DETECTING POISONING BY COPPER.

LAST year we gave an account of the method by which M. Orfila is able to detect arsenical poisoning, when all traces of the metal have disappeared from the alimentary canal.* He has also shown that antimony may be discovered in a similar manner; and he found it in the liver and spleen of a woman to whom M. Bouvier had given a grain of tartar emetic, and who died fifteen hours afterwards without vomiting. M. Orfila recently read a paper before the Academy of Medicine, in which he showed that the same method is applicable to the detection of the salts of copper. We will content ourselves with translating his conclusions, as we find them in the *Gazette Médicale* of June 20, 1840.

It follows, he says, from the experiments and considerations detailed in his paper:—

1. That the acetate and sulphate of copper, when introduced into the stomach, or applied to the subcutaneous cellular tissue of living dogs, are absorbed, and carried into every organ in the system.

2. That it is probably the same in man.

3. That it is possible, by chemical means, to obtain metallic copper from the absorbed portion of the cupreous salts.

4. That it is indispensable to have recourse to this process, when these poisons have not been found in the alimentary canal, or in the other parts to which they had been immediately applied, or in the matter vomited; for if we limit ourselves, as has hitherto been done, to searching for the cupreous salts in the matters obtained from the stomach and intestines, we run the risk of not discovering them at all: either because none remains in the alimentary canal, or because the matters vomited have been removed; while the metal can always be obtained from the portion absorbed.

5. That a medico-legal report must in future be declared incomplete and insufficient, if, in the case just mentioned, the

* *MED. GAZ.* Sept. 14, 1839.

examiner has omitted to look for the cupreous salts in the parts where they are to be found after having been absorbed.

6. That besides the portion of the cupreous salt absorbed during life, and which is to be found unequally scattered over all the tissues, several organs (particularly the abdominal viscera, if the salts have been introduced into the alimentary canal) contain some of the salt, which has reached them by imbibition after death. This happens more particularly on the part of their surface which is in contact with the alimentary canal; and the quantity varies according to the period when the body was opened. The copper obtained from these organs proceeds partly from what was absorbed during life, and partly from what had penetrated the tissues after death.

7. That the imbibition here mentioned, and which has been perfectly proved by the experiments of Fodera, Collard de Martigny, Magendie, Müller, &c. as well as by my own, is not peculiar to poisoning by copper, as it is observed whenever any poison, having been incompletely absorbed during life, remains upon the tissues after death; providing that the poison is dissolved, or is capable of being dissolved, in the liquid which touches it. And thus, what has been said of the proportion of the cupreous poison furnished by the viscera, whether in consequence of absorption or imbibition, is applicable to all cases in which the poisons have been absorbed.

8. That it is possible, in the majority of cases, to determine if the cupreous salts, or other poisons obtained from the viscera, in medico-legal investigations, have been introduced during life or after death, by paying attention to the symptoms which preceded death, and the structural lesions observed on opening the body, or by means of chemical experiments on some organ remote from the digestive tube, rather than on another which is near it, or on one part of a viscus rather than another. It is true, that in a few rare cases—as, for instance, if a long time has elapsed since the burial of the body, when nothing is left but the *detritus* of the viscera—the problem might be less easy to solve, unless the examination was assisted by the information collected by the magistrates, positively demonstrating that the poison was not introduced into the alimentary canal after death. The annals of justice, moreover, do not supply a single example of an accusation of poisoning, where wickedness has been carried to such a pitch as to introduce poison into the alimentary canal of a corpse, for the purpose of founding a charge.

9. That the absorbed cupreous salt, which caused the death of the patient,

may be detected by boiling the viscera, or the flesh, for an hour in distilled water, drying the filtered decoction, and carbonising it with nitric acid, or decomposing it by nitrate of potash.

10. That if boiling water does not dissolve the whole of the absorbed cupreous salt even in six hours, still enough is extracted to put its existence beyond the reach of doubt.

11. That boiling for an hour in distilled water does not dissolve any trace of the copper naturally existing in our frame; for this can only be partially separated by the concentrated acids, and totally by incineration alone. Hence the examiner may conclude, that some preparation of copper has really been introduced during life, either as a poison or as a medicine, if he obtains copper from an aqueous decoction prepared as above mentioned, unless it is proved that the copper penetrated the tissues in consequence of imbibition after death.

12. That it is best to boil, in the first place, the viscera which are distant from the alimentary canal; next, those portions of the abdominal viscera which have not been in contact with the canal; and then the parts which have been in contact with the stomach and intestines; for, by thus operating, we are certain to obtain from the latter a greater quantity of poison, and to collect information adapted to solve the questions which might be raised concerning imbibition.

13. That if the medico-legal researches, instead of relating to the viscera, referred to alimentary or excrementitious substances, contained either in the digestive canal or the liquids vomited, these substances must be boiled for an hour in distilled water, and the decoction is to be filtered, dried, and decomposed by pure nitric acid, or by nitrate of potash not containing any copper. The presence of copper, after the decomposition, enables us to affirm, that a cupreous preparation has been taken, unless, indeed, it has been introduced after death. Although boiling water dissolves only a small part of the salts of copper when they are intimately combined with organic matter, yet the solution contains enough of the metal to coat a plate of iron.

14. That if, after having treated these alimentary or excrementitious matters with boiling water, no copper is found, it would be wrong to treat them with the strong acids, or to incinerate them; because even if copper should then be obtained from them, it would not prove that it had been taken as a poison or a medicine, since several alimentary substances contain enough copper to be detected by strong acids, and still more by incinera-

tion. It is better in such a case to give up the search for copper in these alimentary substances, and to treat the alimentary canal, the liver, spleen, kidneys, &c. with boiling water.

15. That while I admit, with M. Devergie, that the quantity of copper naturally contained in the intestines of an adult does not exceed 46 milligrammes, (9 10ths of a grain,) I cannot grant him that it is worth while, in forensic medicine, to take account of this copper, and decide, by incineration, whether the copper obtained is, or is not, that which is naturally present; because, as he says himself, the quantities of normal copper found in the few experiments he made, were too variable to permit him to consider the above-mentioned quantity as exact; and, still more, because it may easily happen, that, after poisoning by a cupreous salt, so little remains in the intestines, that, after adding the copper thus introduced into them to that which they naturally contain, only 40 or 50 milligrammes can be obtained.—(See M. Devergie's *Médecine Légale*, 2nd edit. vol. iii. p. 536 37.) The copper obtained by incineration can be taken into account only when it much exceeds the quantity which farther and multiplied experiments shall have shown to be the maximum of normal copper; but, even in this case, it is infinitely preferable to use the means I propose, because they furnish the clear and precise results which I will conclude by repeating,—*Copper, which has been employed as a poison, may be obtained in part from viscera boiled in water for an hour, but not an atom of the copper naturally existing in them can be obtained in this manner.*

HYPEROSTEOSIS OF THE RIBS IN CHRONIC EMPYEMA.

DR. STOKES exhibited the thorax of a female who died fourteen months from the first attack of pleuritis of the left side. On her admission, an extensive effusion existed, and the heart was found to pulsate at the right side of the sternum, and soon after pericarditis supervened, yet without pain or increased irritability of the heart. The disease was only discovered by the existence of the friction sounds over the whole heart. This was the third case noticed by Dr. Stokes, in which a perfectly latent dry pericarditis occurred while the heart was dislocated by an empyema. Dr. Stokes exhibited drawings illustrative of two cases of this description, in which there had been no pain, palpitation, or irregularity of the heart, preceding or accompanying the attack of pericarditis. The effusion in the case now before the society was partially absorbed, and the heart was restored to its natural position, but the side continued

extremely dull on percussion. After some time the patient began to expectorate large quantities of mucopurulent fluid, and soon after this a large and distinct gurgling could be heard in the supra-spinous and supra-clavicular region. Soon after this the patient complained of the occurrence of an unusual sound in the anterior portion of the left side whenever she coughed. A puffy tumor made its appearance in the second intercostal space, which could be easily obliterated by pressure, and conveyed a distinct sensation to the touch, as of air mixed with liquid. The tumor was reproduced in each fit of coughing, and its appearance was always accompanied with a sound audible to a great distance, and much resembling the barking of young puppies. For a considerable length of time this phenomenon used to recur at irregular intervals. The abdomen ultimately became enlarged, and the patient sank with diarrhoea.

The compressed lung was strongly adherent to the mediastinum and postero-superior portion of the chest. It was not more than three inches and a half in length, and one in depth. It presented scarcely a trace of its normal structure, and the large bronchial tubes and the branches of the pulmonary artery terminated in culs de sac. The left pulmonary artery, previous to its entering the lung, was not diminished in size. The eighth nerve was somewhat smaller than its opposite, and felt unusually hard. There was no evidence of tubercle in the affected lung, nor in the right lung. A sinous passage existed in the second intercostal space which seemed to communicate with the mammary abscess, which had so long existed; but dissection did not discover the source of the emphysematous tumor above mentioned.

The structure of all the true ribs in the affected side was remarkably altered. They were exceedingly dense and hard, and nearly three times as thick as those in the opposite side. They were so closely approximated as that in many places the intercostal spaces were wholly obliterated. Between a few of the ribs, however, the intercostal muscles could be seen forming a red elevated line, as if they had been doubled in themselves, and forced outwards between the ribs. There was no actual bony union of the ribs, but the chest on the affected side felt, when pressed upon, as if it were a continuous bony case, giving a dull sound on percussion, and resisting remarkably. The ribs on the opposite side were thin and very elastic.

Dr. Stokes observed, that though from the analogies of the disease we might be prepared to expect such a change of the ribs in every chronic empyema, he was not aware of its having been hitherto described. Dr. Stokes concluded by alluding to the

observations of Andral on the ossification of the costal cartilages in phthisis, and the hypertrophy of the bones of the cranium in chronic hydrocephalus. (Museum, Park-street.)—*Dublin Journal of Medical Science.*

LUMBRICI IN THE HEPATIC DUCTS.

DR. J. POWER exhibited the recent parts in this case; the ductus communis was distended with a large collection of lumbrici; its diameter exceeded half an inch; the hepatic duct was still larger, being in some parts more than an inch in diameter, and filled with lumbrici. The duct in the substance of the liver contained numbers of this description of worm, as did likewise the stomach and intestines. It was not known whether there were any symptoms of hepatic derangement during life, the specimen having been found in a subject brought into the anatomical room of the Richmond School of Medicine. (Museum, Richmond School.) *Ibid.*

EXTRA-UTERINE GESTATION.

To the Editor of the Medical Gazette.

SIR,

IN the paper recently published in the MEDICAL GAZETTE, by Dr. Lee, on the situation of the deciduous membrane in cases of extra uterine gestation, he states, that "In all the cases of fallopian tube conception which have since been recorded, except those of Mr. Langstaff and M. Velpcau, a deciduous membrane has been described as present, lining the cavity of the uterus; and most authors have believed it to be formed in cases of this description."

Dr. Murphy, of Dublin, has since pointed out a case which came under his observation, in which there was no deciduous membrane within the uterus, and of which he has published an account in the Dublin Journal of July 1839.

It appears from the following note, that there are, besides these five cases, other two of extra-uterine pregnancy, described by Dr. Blundell, in which no decidua was found within the uterus, and with which Dr. Lee must have been unacquainted; otherwise he would not have failed to allude to them to support his opinion—that in all cases, the true decidua is formed around the ovum, within the tube, and not within the cavity of the uterus. "Mr. Langstaff, who has paid so much attention to morbid anatomy, examined a case in which there was no well-formed tunica decidua, and I have myself seen two tubal cases, in which the decidua was wanting*."

* Principles and Practice of Obstetrics, by James Blundell, M.D. London, 1834, p. 712.

Other cases may have been recorded, and probably several might be discovered, of which no account has been given, were the numerous specimens of extra-uterine gestation contained in the different museums of Great Britain carefully examined.

I remain, sir,
Your obedient servant,

GEO. H. PARK.

July 8, 1840.

GLASGOW CHAIR OF MIDWIFERY.

DR. CUMIN has resigned the Regius Professorship of Midwifery in the University of Glasgow; having been obliged to remove to Clifton for the benefit of his health, at the close of last autumn.

WEEKLY ACCOUNT OF BURIALS.

From Bills of Mortality, July 7, 1840.

Age and Debility . . .	36	Heart, diseased . . .	2
Apoplexy . . .	3	Whooping Cough . . .	3
Asthma . . .	7	Inflammation . . .	13
Cancer . . .	1	Bowels & Stomach . . .	7
Childbirth . . .	7	Brain . . .	5
Consumption . . .	52	Lungs and Pleura . . .	5
Constipation of the . . .		Insanity . . .	6
Bowels . . .	2	Measles . . .	11
Convulsions . . .	41	Paralysis . . .	2
Dentition . . .	3	Rheumatism . . .	1
Diabetes . . .	1	Small-pox . . .	3
Dropsy . . .	14	Spasms . . .	1
Dropsy in the Brain . . .	5	Thrush . . .	2
Epilepsy . . .	1	Tumor . . .	1
Erysipelas . . .	2	Unknown Causes . . .	80
Fever . . .	4		
Fever, Scarlet . . .	22	Casualties . . .	6
Fever, Typhus . . .	1		

Decrease of Burials, as compared with } 14
the preceding week . . . }

METEOROLOGICAL JOURNAL.

July.	THERMOMETER.	BAROMETER.
Wednesday 1	from 41 to 65	29.84 to 29.77
Thursday 2	57 66	29.73 29.60
Friday 3	55 65	29.50 29.49
Saturday 4	51 70	29.72 29.82
Sunday 5	56 69	29.65 29.69
Monday 6	50 67	29.72 29.48
Tuesday 7	48 64	29.50 29.67

Prevailing wind S W.

On the 1st cloudy, sun shine in the morning and rain in the afternoon; the 2d cloudy, with frequent showers of rain during the day; the 3d, afternoon clear, otherwise cloudy, rain at times; the 4th, evening overcast, with rain, otherwise clear; the 5th, morning overcast, rain fell about one P.M., otherwise clear; the 6th generally clear, except the evening, when rain fell; the 7th, evening overcast, a shower of rain about half past three P.M., otherwise clear.

Rain fallen, .835 of an inch.

CHARLES HENRY ADAMS.

NOTICE.

The case of Malformation in the Kitten, sent from Birmingham, seems scarcely of sufficient importance to have a drawing made for it, and without that it would have but little interest.

WILSON & OORLY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, JULY 17, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISLOCATIONS, *continued.*

METACARPAL BONES—PHALANGES—*Their Nature, Varieties, Symptoms, and Treatment.—The FEMUR—The TIBIA at the KNEE-JOINT—Their Varieties, Symptoms, Diagnosis, and Treatment.*

THE OS MAGNUM.

SIMPLE luxation of almost all the bones of the carpus is impossible, in consequence of their very slight mobility and the strength of their ligaments: the os magnum, however, is an exception. This bone has a head which is received under a species of vault formed by the scaphoid and semilunare. The centre of motion of the two ranges of carpal bones, it may be displaced, but never completely, and only backwards. It occurs very rarely, however, under exaggerated flexion of the hand on the forearm. The head of the bone then projects on the back of the hand: this projection increases under flexion of the hand, and, if it be pressed upon, disappears under extension. It may be masked, or confounded with ganglions, which are often developed about the wrist.

The means of reduction, after what I have said, are obvious, but the reproduction of the displacement is easy. In most cases it does not at all interfere with the motions of the hand, but in some cases it very much weakens the wrist: this is seen in two cases to which Sir A. Cooper refers.

In women, to whom appearance is an object, and in persons who play upon instruments, the complete reduction of this luxation is important. In such a case pressure upon the joint must be conveniently made and long sustained; and it is seldom that patients have patience to submit to the necessary confinement of the part.

FIRST METACARPAL BONE.

The arrangement and the solidity of the articulations at the superior extremities of the last four metacarpal bones, render their displacement, except from gun-shot or some heavy body falling upon and crushing the part, almost impossible. Still, in certain violent movements, the ligaments may be partially destroyed or distended, from whence results a painful tumor, which has been mistaken for articular displacement.

The first metacarpal bone is, however, occasionally luxated upon the trapezium. The motion at this point, backwards, forwards, and laterally, is so free, that we might expect the occurrence of displacement in each of these directions; but if we look more carefully, we see that forced adduction of this bone is limited by its coming in contact with the second—that forced abduction is limited by the muscles of the first interosseous space.

We have, then, to consider luxation backwards and forwards; but the backward movement necessary for displacement is so limited, the muscles which cover the anterior part of the trapezo-metacarpal articulation are so thick and so strong, that luxation forward is regarded by the majority of surgeons as almost impossible. Yet Sir A. Cooper has seen no other than forward luxation. Backward luxation occurs in forced flexion of the thumb and its metacarpal bone; it may, therefore, be occasioned by falls on the radial border of the hand; but, in this case, luxation of the

inferior articulation of the thumb is most likely to happen. In backward luxation there is forced flexion of the thumb and its metacarpal bone into the palm, and impossibility to extend them; projection under the skin of its superior extremity behind the trapezium, and change in the direction of its extensor tendon, with apparent shortening of the thenar eminence. Spite of these signs, this luxation is often mistaken: it is rapidly followed by great tumefaction, which continues long, and renders examination very difficult. It is most important, in these cases, to ascertain at once the nature of the injury, because at first it is easily reduced, but if a few days only pass over, it becomes almost, if not quite, irreducible.

Treatment.—To reduce a dislocation backwards, an assistant firmly grasps the forearm above the wrist; another grasps the thumb, first drawing it forwards in the direction of the displacement; then, when the head of the metacarpal bone is brought to the level of the trapezium, it is continued in the sense of extension. The surgeon now grasping the wrist, brings both thumbs to bear upon the superior extremity of the luxated bone, and pushes it forward and downward. A dull sound, and the disappearance of the deformity, indicate that reduction is completed. To prevent the recurrence, and to dissipate the tumefaction, the joint should be surrounded with compresses, wet with evaporating lotion; and some such apparatus should be applied as that we described when speaking of metacarpal fractures. In the forward luxation, as observed by Sir A. Cooper, the metacarpal bone was directed inwards, between the trapezium and the head of the second metacarpal bone, forming a projection towards the palm; the thumb was thrown backwards, and could not be directed towards the little finger; there were also much pain and swelling. To facilitate reduction, the thumb must be inclined towards the palm of the hand during the time extension is made, for the purpose of lessening the resistance of the flexors. No sudden effort will avail; extension must be firmly but gradually made. If simple extension be insufficient, the general impression seems to be, that it is wiser to leave things to the amelioration which time may bring about in them, than to divide muscles and expose nerves and blood-vessels.

THE FINGERS UPON THE METACARPAL BONES.

The solidity of their ligamentary support, increased by the extensor and flexor tendons, and laterally by those of the lumbricales and inter-ossei, renders luxation very rare. Four species are, it is true,

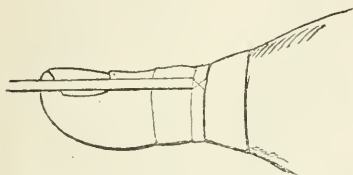
admitted, but the slight extent of abduction and adduction, limited, as they are, by the other fingers, should render lateral luxation, at least of the middle and ring fingers, very unfrequent. The index and little-fingers may be displaced; the former outwards, the latter inwards. I speak now theoretically, for I know no detailed cases of either. It is not so with the first phalanx of the thumb, which may be luxated outwards or inwards.

Forward luxations can scarcely happen in the four last fingers: the inferior articular extremities of the metacarpal bones are so much extended in this case, and the movement of flexion is consequently so extensive, that the anterior surface of the first phalanx is in contact with the palm before any displacement can happen. It is, however, different with the thumb; its flexion is limited, and, spite of the great resistance of the surrounding parts, it may be luxated forwards. *Backward luxation* has been observed in all the fingers; the posterior part of the joints is less protected than the others, the movement of extension is limited, and if by violence they are carried beyond that point, dislocation backward may follow. Cases are described where muscular action alone has produced it in the thumb: whether this be not mainly owing to particular conformation or relaxed ligaments, it may be difficult to say. This luxation is characterized by a tumor in the palm of the hand corresponding to the joint, or more precisely the inferior extremity of the metacarpal bone, by another tumor at the dorsal surface formed by the superior extremity of the first phalanx: placed in forced extension posteriorly, it describes a right angle with the metacarpal bone. The two last phalanges, on the contrary, are strongly flexed by the dragging of the flexor tendons; the finger is immovable, apparently shortened; there is pain and tumefaction; and this luxation rapidly becomes irreducible. Usually reduction is easily accomplished: an assistant firmly holds the forearm above the hand; another at first draws the finger in the sense of extension, then quickly in that of flexion; the surgeon, with both thumbs, pushes the phalanx below the metacarpal bone.

Sometimes we completely fail in luxation of the thumb, especially if it have existed some days. Most surgeons have met with unfortunate cases, and have attributed it to various causes. Some persons have attributed it to the little opportunity of making counter-extension afforded by the thumb, and the resistance of the very strong muscles which surround the joint; Hey, Dupuytren, and Bell, to the distension of the lateral ligaments, which, not being always ruptured after displacement,

take a perpendicular direction, and are thus opposed to restoration of the surfaces. Bell, for the purpose of vanquishing this obstacle, proposed to divide the lateral ligaments by means of a cataract needle. Vidal and Pailloux think it is owing to the interposition of the anterior ligament between the two surfaces. If the ordinary means of reduction fail, it is advised that recourse be had to the following means of

Fig. 1.



increasing extension; but it must not be carried too far, or the phalanx may be fairly torn off. If that mode of extension fails, many surgeons act upon the opinion of Sir A. Cooper, that it is better to leave things to chance than to interfere with the joint by means of a cutting instrument, as Desault advised.

PHALANXES.

Luxation of the second phalanx is rare, and has very seldom been observed in any other direction than backwards; forwards, the extent of motion is so great that the anterior surface of the second phalanx may be perfectly in contact with the corresponding part of the first, without any displacement of the articular surfaces. As to lateral luxation, the size of the articular surfaces must cause it to be very rare. Luxation of the last phalanx is still more rare than the preceding, in consequence, no doubt, of its affording so small a surface for the action of violence: it may be luxated in any direction, but it has been generally seen directed backwards. In this injury it is the last phalanx which is carried in the sense of extension; in forward luxation it is in the sense of flexion. The prognosis is not always favourable in these cases, even though reduction be speedily accomplished. Sanson has twice seen backward luxation of the second phalanx of the thumb followed by gangrene; which in one case extended to the arm, in the other determined tetanus.

Treatment.—The treatment in these cases varies, according as they are simple or compound: the first should be reduced as quickly as possible. If the means already indicated fail, the Italians are accustomed to take a riband, make a slip knot on it, place the slip knot just beyond the luxation, protect your own hand, then twist the ends of the riband around it, and make extension. This method rests upon

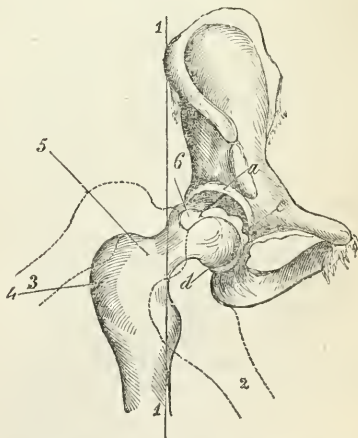
a new idea: you act directly upon the displaced extremity of the phalanx.

If these luxations be accomplished, prompt reduction should be attempted, and active antiphlogistic measures used. Sir A. Cooper advised that, in such cases, resection of the second phalanx should be performed; and passive motion should not be attempted for a fortnight or three weeks.

FEMUR.

The form of the cotyloid cavity is slightly oval; its greater diameter commences superiorly, below the anterior-superior spine, and ends inferiorly above the tuberosity of the ischium. It is at these two points that the cotyloid border is most prominent; setting out from these, are two hollowed or notched borders—the anterior most so—at a point corresponding to the foramen ovale, the posterior at a point corresponding to the external iliac fossa. Now what are the most extended movements of the thigh? Those which direct the head of the femur upon the anterior and posterior borders of the cotyloid cavity, precisely where the depressions exist: dislocation might, therefore, be naturally expected to be most frequent forwards and backwards; and some persons have wished, for the purpose of simplification, to include all dislocations of the femur, primarily, under two branches—forward and backward, as in the accompanying figure; but the head

Fig. 2.



of the femur may escape from the acetabulum in other directions; and therefore it seems proper to describe them as *upwards and outwards*, into the iliac fossa; *downwards and inwards*, upon the foramen ovale; *backwards*, into the ischiatic notch; *forwards*, upon the pubis; *downwards*, upon the ischium. Of these, the

most frequent, in the proportion of twelve to twenty, according to Cooper, is the displacement *upwards* and *outwards*; to produce which, the thigh must be forcibly adducted, whilst external violence carries it from without inwards; as is the case when a person carrying a heavy load falls under it, the thigh being in a state of forced adduction. In this movement the head rolls in the cotyloid cavity, from within outwards, breaking through the capsular ligament, and is carried under the *glutæus minimus*. It usually occurs in a fall from a height, or in sinking under a burden. The limb, according to Cooper, is shortened from one and a half to two and a half inches, the fold of the buttocks is higher and more prominent than that of the healthy side, the knee and the foot are rotated inwards, the knee is on a plane, a little anterior to that of the healthy side; the great toe corresponds to the tarsus of the other side, and the great trochanter is nearer to the crest of the ilium, by so much as the limb is shortened. (See fig. 3.) The thigh is flexed, and a little adducted; this may be increased so far that the affected limb may cross that of the opposite side. Abduction and rotation outward are impossible; extension is very limited and painful, and the corresponding buttock is prominent. Cooper's opinion is different; he thinks that the absence of the projection over the trochanter is characteristic.

If the luxation be not reduced, the limb remains shorter; the patient is ultimately obliged to wear a shoe with a high heel; the thigh is atrophied by inaction; certain muscles are almost useless; others (the hamstring ones, for instance) form a projection. After moving much, the patient experiences pain in the healthy hip and the injured thigh; he cannot stoop without difficulty, and if he try to pick up any thing, he flexes, at a right angle, the knee of the affected side. He requires two sticks to walk, and slight obstacles throw him down.

With moderate care, this luxation need not be confounded with fracture of the neck, either within or without the capsule. In the latter, the limb is shorter, and the trochanter is nearer to the crest of the ilium; but in the vast majority of cases the limb is rotated outwards, and the slightest extension is sufficient to reduce it. Rotation outwards, and abduction, are also usually easy. Still less excuse should we have for confounding it with dislocation and shortening, consecutive to hip disease.

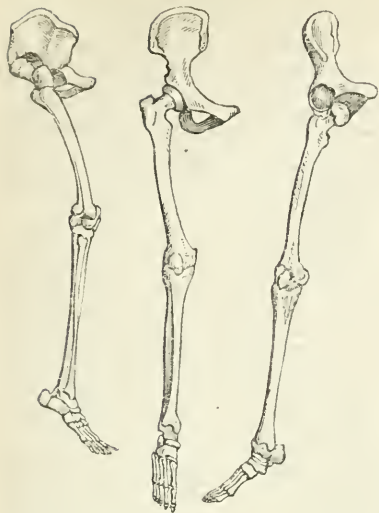
Downwards and inwards or sub-pubian.—This variety of dislocation is said to occur in the proportion of three out of twenty cases. This proportion is small, considering the frequency of abduction, the depth of the

anterior hollow, and the feebleness of the capsule, at this point. But it must be remarked, that it is especially by a fall that this dislocation is produced: in that case usually, by a kind of instinct, the thigh is carried inwards; yet a man may fall, the thigh being abducted, or being on the knees, the thigh separated, a weight may fall on the haunch, and push the head inwards. In this luxation the capsular ligament is destroyed: still there is a point upon which authors are divided—is the *ligamentum teres* ruptured? Sir A. Cooper thinks it must be ruptured before the head of the bone quits the cotyloid cavity. Boyer thought that a very extended displacement of the head was necessary, to cause the total or partial rupture of the ligament. Which of the two opinions may be right it is not in our power to say. I know of no examination after death in support of one or the other. It is true Sir Astley Cooper describes a specimen, dissected long after such a luxation, in which the round ligament was completely ruptured; but as we see also, that the sub-pubian ligament, and the external obturator muscle, had also completely disappeared, we are uncertain whether the *ligamentum teres* was destroyed by the accident, or whether it subsequently disappeared. Besides the destruction of the capsular ligament, the *psoas* and *iliacus*, the *glutæi* and *pyramidalis*, muscles are elongated, the adductors raised and injured, especially the *pectinæus* and short adductor.

It is during forced abduction, as shewn in fig. 1., that this accident happens: either the patients fall to the ground between their legs, as it were, or they fall under a burden, the burden coming on the hip or the loins; in this position the head glides downwards and inwards. The contraction of the adductors contributes much to bring the head into the *foramen ovale*.

We distinguish the luxation by the lengthening of the limb; by so much as the space between the cotyloid cavity and the *foramen ovale*, the limb rests on its outside, and cannot be brought into contact with the other; the leg is flexed. (See fig. 3.) If the hand be placed in the perineum at the internal and superior part of the thigh, we feel a tumor, formed by the head of the femur, and according to Cooper, a hollow below Poupert's ligament. The buttock is tense, flattened, or even hollowed; the fold is depressed, and instead of presenting its usual crescentic character, it exhibits at its middle a slightly obtuse angle. The raised adductors present a cord-like tension: adduction and rotation inwards are impossible. Cooper maintains, as a decided characteristic, the flexion of the trunk, by the action of the *psoas* and *iliacus* muscles.

Fig. 3.



If the reduction be not accomplished, walking is accompanied by the same difficulties as when there is elongation of the limb from any other cause; the patient supporting himself on the whole of the plantar surface, and flexing the leg to render it easier.

Upwards and forwards.—In luxation upwards and forwards, which occurs in the proportion of one in twenty cases, the femur breaks through the anterior part of the capsule, ruptures the round ligament, and passes on, below Poupart's ligament, to the horizontal portion of the pelvis. Cooper has known this luxation to be accompanied by laceration of Poupart's ligament; the head of the femur, lodged between it and the pelvis, raised the psoas and iliac muscles, causing tension of their tendons. After a time the head and neck are flattened, and a cavity hollowed out for the neck upon the pelvis. For this luxation to occur the pelvis must be carried forcibly downwards and backwards; the head of the femur being directed upwards and forwards. When, for instance, the foot is advanced forward, and unexpectedly gets into a hole, the superior part of the body is inclined backward. In this luxation, the patient falls backwards instead of forwards. The symptoms of this luxation are easily distinguished: the limb is shortened by an inch, according to Cooper, is turned outwards, and cannot be directed inwards; the head of the femur, placed upon the pelvis, presents in the groin a rounded tumor, on the inner side of which we may feel the crural vessels. The great trochanter directed forwards, is

situated on a vertical line drawn from the anterior superior spinous process of the ilium; the buttock has lost its rounded form, and is flattened; there is severe pain in the inguinal region, which is extended along the thigh in the direction of the crural nerve. Though believed by Petit and Boyer to exist, tumefaction of the leg from pressure upon the crural vein rarely occurs. It is not easy to confound this luxation with fracture of the neck; the only relation between the two is the rotation outwards. The head of the femur upon the pubis is a sufficient characteristic; still Sir A. Cooper mentions three cases in which the mistake has happened.

Luxation backwards of Cooper; sacro-iliac of Gerdy; backwards and downwards of most authors. The nature of this dislocation is still a subject of controversy. Boyer believed it primarily impossible, and maintained that it was a displacement, consecutive to that in which the head of the bone was upwards and outwards: Delpech entirely rejected it, either primitive or consecutive; still it does occur, according to Cooper, in the proportion of five in twenty cases, and the limb is usually shortened half an inch to an inch; the knee and foot turned inwards; the flexion of the leg upon the thigh is moderate; the whole femur is turned inwards, so that the great trochanter, though behind the cotyloid cavity, is turned a little forwards, the external border becoming nearly anterior, as well as the external condyle; the head is generally jammed against the ischiatic notch; rests on the pyramidalis, between the upper edge of the sciatic notch and the sacro-sciatic ligament, so that in fat persons it cannot be felt. In this luxation, besides destruction of the capsular ligament, the round ligament and a portion of the gluteus maximus and medius, there is a complete rupture of the gemelli (Billard); and in Sir A. Cooper's case of the pyramidalis, gemelli, obturator, and quadratus.

It is in flexing the thigh that this accident is produced; that is to say, there is extreme flexion and adduction; an external violence forcing the knee inwards and forwards, so as to cross the opposite leg; the head of the femur instead of escaping at the superior part of the posterior border of the cotyloid cavity, escapes at the inferior part, and is directed upon the sciatic notch.

Luxation downwards, on the tuberosity of the ischium.—Cooper never saw this accident; B. Bell is the only person who has observed it; in his case it happened during violent abduction of the thigh. The symptoms were slight flexion of the thigh upon the pelvis; it was strongly abducted and rotated inwards; it was not sensibly elongated. It was impossible to extend the

limb. Ollivier (Arch. t 3, p. 545) gives an example of a rather singular and contradictory kind.

Incomplete Dislocation.—In the case of Robert (which he considered incomplete) the signs were as follow:—Thigh flexed, adducted, and rotated inwards; elongation to the extent of seven or eight lines; buttock rounded and very projecting; head of the femur felt above and behind the tuberosity of the ischium. The patient dying, the quadratus was found to be destroyed; the orbicular ligament largely opened at its posterior and inferior portion; the inter-articular, ruptured. Certainly those signs more clearly indicate a complete than an incomplete luxation. In fact, it is not with the hip as with the shoulder joint. The heads of the femur and the humerus are similar, it is true—both rounded, and almost spherical—but the articular cavities are very different. If the head of the femur rested for a moment upon the edge, it would either be slipped back, or drawn away by muscular contraction, and luxation must necessarily be complete. The glenoid cavity, on the contrary, has a form almost plane; its extent relatively to the head of the humerus is also much less than that of the cotyloid cavity with reference to the femur. This character of the humero-scapular articulation brings it much nearer to that of a ginglymoidal articulation, in which incomplete luxation often happens. I, therefore, do not believe in the existence of incomplete luxation of the femur—I regard it as impossible.

The ordinary characters of dislocation of the femur are sometimes not well marked, and may be mistaken; but such cases are unfrequent: generally, the signs are clear and evident, and the disease easily detected; it is, therefore, difficult to account for those instances where they have been confounded with fracture of its neck. In dislocation, it is impossible to restore the limb to its natural direction without reduction; in fractures, it may be moved in any direction. These movements may produce crepitation. We may usually without any difficulty restore the limb to its natural form and length, but it resumes its unnatural form as soon as it is left to itself. In fracture of the neck of the femur, there is eversion of the foot, and shortening of the limb. In dislocation, shortening happens only when it is upwards; when the head of the femur is on the dorsum of the ilium, there is shortening and inversion; eversion is only seen when the dislocation is forward. It therefore results, that dislocation upwards and forwards is the only one which presents those two symptoms common to fracture, shortening and eversion; but the rigidity

of the limb, and the presence of the head of the femur upon the body of the pubis, ought to prevent mistake.

Compared with other articulations the luxations of the thigh are very serious, from the importance of the joint, the difficulties and inconveniences often attendant upon reduction, and, if not accomplished, the lameness which is a consequence; but tumefaction and inflammation often disappear after reduction, and the patient might walk in eight or ten days.

Dislocations of the thigh are usually reduced after much traction, because of the muscular contraction. The most difficult to reduce is the luxation downwards and backwards; then outwards and upwards; then downwards and inwards; then forwards and upwards: at last, that downwards, whose reduction is the easiest. Sir A. Cooper thinks the easiest is that on the foramen ovale, and the most difficult that into the ischiatic notch.

The complication of luxation of the femur with fracture may retard or prevent reduction. There may be fracture on one side, with luxation on the other, and then the diagnosis is very difficult. However, luxations are not always irreducible even after the consolidation of a fracture. A remarkable observation of luxation on the pubis, with fracture, mentioned by the French translators of Sir A. Cooper, was reduced on the eighth day.

Treatment.—At the present day there exists much difference of opinion as to the best general method of reduction. In France, until of late years, the use of machines was proscribed; in England, following the advice of Cooper, the use of pullies is general. Whatever means are employed, it is necessary to determine first the position which ought to be given to the limb before extension is made. Wattmann, Kluge, and Rust, have proposed several modes of lessening muscular contraction; but they do not so far differ from those in general use as to render a detailed description necessary. It must be borne in mind, that the principal difficulty to be overcome is muscular contraction; therefore it is thought wise to adhere to the advice of Pott, and place the limb in a state of semi-flexion—the thigh upon the pelvis, and the leg upon the thigh.

The position to be given to the patient is to place him on a bed, or table, covered with a mattress, the head turned towards the point where a hook or ring is fixed; the groin is to be protected, and a towel or sheet passed around it and fixed to the hook; another sheet is passed around the pelvis, which is then fixed upon the table. These precautions taken, a bandage is now placed around the thigh, just above the knee, and extension with or without pullies is to be

made. The extension must be made from without inwards and a little forwards for a luxation upwards and outwards; a little outwards, for the luxation downwards and inwards; almost parallel to the limb, but a little downwards and backwards, in the luxation upwards and inwards. If the displacement were downwards and backwards, the flexion of the thigh consequent upon dislocation may interfere. Reduction is usually accompanied by a noise, which results from the shock of the head against the floor of the cavity; we may not hear it if the muscles be tired by long traction. In all cases, we immediately detect it, by the direction, the conformation, and the possibility of moving the limb. Usually for some days the limb is longer than the other, which may be owing to a tumefaction of the soft parts within the joint.

To overcome muscular contraction, in this country, we have been accustomed to bleed to the extent of 16, 20, or 40 ounces, then place the patient in a warm bath until faintness comes on. During the time the patient is in the bath, a grain of tartar emetic may be given every ten minutes until nausea is considerable. The patient is then to be taken out of the bath, and wrapped up in a blanket; but these severe depleting means are not always required. When the luxation is into the sciatic notch, it will be necessary to place a towel around the upper part of the thigh, with which an attempt is to be made during extension to raise the head up.

As to the time which may have elapsed without precluding us from attempting reduction, we have no certain data. Fabricius Hildanus would not attempt to reduce a luxation of four months' standing. Petit believed them curable at the end of a month or two; and when there is fracture he recommends that no attempts should be made before consolidation is complete, which may, says he, be six months, a year, or even more. In the memoirs of the Academy of Surgery, t. v. p. 529, is a well authenticated case, where two years had elapsed, and yet reduction was effected. In the memoir of Marx upon old dislocations, are some cases of reduction after a long interval, 26, 31, 78 days, without much difficulty, and without lameness. Cooper believed that three months after a luxation of the shoulder, and eight weeks after that of the hip, may be named as points beyond which it will be imprudent to attempt reduction, unless in persons of very lax fibre, or persons advanced in age. He gives cases of dislocation of the femur reduced at the end of five, seven, and nine weeks.

It is curious to inquire, what becomes of luxations left to themselves. A new articulation is formed. After luxation up-

wards and outwards, we find, according to Moreau, the femur atrophied, its head less convex than natural, and received into a cavity on the ilium, under the gluteus minimus, which is transformed into a capsule for it; the cotyloid cavity somewhat shallower; the new cavity not invested with cartilage, but with a thickened periosteum. After the luxation upon the foramen ovale, Moreau describes the appearances upon a specimen possessed by Morand;—of the foramen ovale, where the head of the femur rested, there remained only a small part on the side of the symphysis pubis. An osseous plate was formed under the internal obturator muscle, and nearly closed the opening; from the ischium and pubis arose numerous osseous productions, surrounding and confining the head of the femur; at the same time the cotyloid cavity was narrower downwards, and deeper, and irregular osseous projections arose from the trochanter major. In Sir A. Cooper's case the external obturator muscle had disappeared, as well as the obturator ligament, the foramen being blocked up by the head of the femur. Around the foramen osseous matter was deposited, deepening the cavity where the head was confined: this cavity surrounded the neck of the femur without touching it, and the head could not be extracted without breaking up the edge of the cavity. Its internal surface was smooth and polished, while the cotyloid cavity was studded with osseous matter. The head of the femur was a little altered; the round ligament was entirely ruptured, and the capsule partly destroyed. And such are the means which nature seems usually to resort to for securing the displaced head of the femur.

CONGENITAL DISLOCATION.—Deformities of the pelvis, and of its articular surfaces, have a certain influence upon the functions of locomotion, and are occasionally accompanied by congenital luxation of various kinds; but the luxation need not be always congenital, it may be produced in after life. Thus, Dupuytren mentions the case of an old woman who had in her family many such cases; in her the accident did not occur until she was thirty, but there can be no doubt that the malformation had existed from birth. There are persons who no doubt present these malformations, who can luxate the limb at will. Portal saw a person who could do so, the Abbé de Saint-Bonnet. There is a medical man, now living at Troyes, who can also do so.

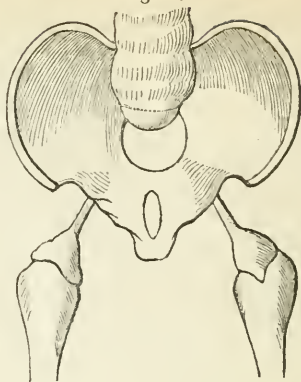
The disease is mentioned in the books of Hippocrates, also by Avicenna and Paré, and especially by Verduc. Paletta first gave a good description and a plausible explanation of this kind of malformation. Dupuytren, Breschet, Cru-

veilhier, and Delpech, have studied the disease with great care.

In this dislocation the limb is shortened, the head of the femur is upon the dorsum of the ilium, the great trochanter is prominent; almost all the muscles of the upper part of the thigh are retracted towards the crest of the ilium, where they form around the head of the bone a kind of cone, of which the base is the iliac bone, and the summit at the great trochanter; the tuberosity of the ischium is abandoned by these muscles and almost denuded; the limb is inverted, the calf of the leg and the heel are everted; the thighs are directed obliquely downwards and inwards; and this obliquity is as much greater as the patient is advanced in age and the pelvis larger; the femurs then tend to cross each other inferiorly. The whole limb, but more especially its upper part, is emaciated; motion is very limited, especially those of rotation and abduction. The lower limbs are altogether arrested in their development, and bear no proportion to the trunk and upper extremities; the contrast is rendered more striking by the size of the pelvis, the development of which has not suffered.

If we examine a patient suffering from this disease, in the erect position, we see the superior part of the trunk directed backwards, while the lumbar portion is projected in the inverse direction, so as to leave a considerable posterior hollow in that region; the abdomen is strikingly prominent, the extremities, only, of the feet resting on the ground. No description of the disease can give a better idea of the appearance presented, than the simile which Delpech attached to it—that of a dog standing on its hind legs. When the patient is about to walk, he raises himself on the point of his toes, inclining the superior part of the trunk towards the leg which is about to support the trunk, and with difficulty raises the other to follow it. The oscillations which characterise this mode of progression are painful to look at; and when the hand is placed upon the head of the femur, on which the body rests, it is found to glide along the iliac fossa, and the pelvis is proportionately depressed. When anatomically examined, the connection between the head of the femur and the acetabulum is very imperfect—(see fig. 4)—the head is altered in form, so as to present sometimes the appearance of a flattened spine; or it assumes a simple styloid prolongation, which is situated in the external iliac fossa, outside of the acetabulum, which presents the most varied character; sometimes it is almost effaced, sometimes the articular cartilages are entirely wanting; usually the two articular surfaces are united by an intermediate

Fig. 4.



ligament, but sometimes they are entirely independent. The muscles seem to have mounted up to the iliac spine; among them some are atrophied, others highly developed. The displacement upwards and backwards explains the obliquity of the thighs, and their disposition to cross each other, at the same time that it accounts for the state of flexion they present, and for the direction of the feet inwards.

To assign a cause for this malformation is not easy; many hypotheses have been proposed; whichever we adopt, so much seems certain, that it is produced during intra-uterine life; for no morbid symptom would justify us in admitting its development after birth; indeed, the total absence of pain would exclude the idea. It therefore differs from ordinary luxation in this respect,—it is usually met with on both sides at the same time, it is not preceded by any symptoms of coxalgia, it is seldom manifested until the patient attempts to walk. It has been a much debated question whether the disease be not only developed, but pass through its stages during intra-uterine life. Dupuytren, it would appear, inclined to the opinion that it was a consequence of violence exercised upon the limbs during uterine life. This hypothesis seems hardly tenable, for there is no sign in most cases which would induce us to admit this mechanical cause of luxation. Paletta's opinion would appear more probable; and is sustained by strong arguments by Delpech, Cruveilhier, and Breschet: they refer it to an aberration of the orthomorphical power; and the following are the inductions upon which the opinion is supported: it is much more frequently seen in females than males; it is also in female children that other deformities which supervene during the evolution of the embryo are most frequent. Cruveilhier has described and figured a case in which

this existed, in conjunction with other malformations. Marjolin has seen congenital luxation of the femur transmitted from mother to child, as is sometimes seen in other deformities.

This deformity does not compromise the health, nor injure the sexual functions; but is a serious obstacle to progression, increasing with the development of the pelvis, and the increase of the bulk of the upper part of the body.

The general impression which exists with regard to this disease, is, that whatever might be our confidence in the resources of mechanics as applied to deformities, it is impossible to believe that articular cavities could be hollowed out. Certain palliative agents have been proposed to remedy to a certain extent the inconvenience: thus, Dupuytren recommends cold bathing as a means of strengthening the muscular system, and also a bandage passed around the pelvis, against which the head of the bone might find support. It is found that when the patient pays much attention, the lameness is less marked; and for the purpose of rendering this attention constant, military drilling has been recommended. Again, an impression has been very generally entertained that the cotyloid cavity is always destroyed or effaced; that, consequently, all efforts to reduce the dislocation must be useless. Humbert has shown that the cases where the cavity has become effaced are a minority; it nearly always exists, but is usually smaller than natural; but even then it is often large enough to admit the head of the femur. In consequence of this, Humbert has ventured to employ in the treatment of this disease nearly the same means as are used in accidental luxation. Several observations contained in his work attest the success of his method: he himself admits that when the cotyloid cavity is wanting, the plan must fail; but he says, as we cannot *à priori* recognise these cases, extension should always be employed before incurability is admitted. M. Humbert continues extension for a considerable time after reduction, for the purpose of accustoming the parts to their new situation: this M. Pravaz thinks necessary; but both concur in the necessity of extended repose and of great caution in the first attempts to rest the body upon the limbs. Humbert recommended, when we are satisfied that no cotyloid cavity exists, to dislocate the head into the foramen ovale, and in this recommendation Pravaz concurs, upon the principle that when luxations into this fossa have not been reduced, after a time the patients have walked pretty well.

The question still remains undecided in

my mind whether actual cure happens. I do not accept the cases of Humbert as cures. I apprehend the ameliorations, which I do not question, do not result from the head of the femur being brought into its own proper cavity, but that it is carried into the sacro-sciatic notch below the pyramidalis, where conditions more favourable for artificial joints are found. I do not by this seek to lessen the credit which fairly belongs to him, but only to place his merit on its proper footing. The time occupied in the treatment is very long; in one case Pravaz had the patient under extension four months; seven months in another was required to bring the head of the femur to the level of the cotyloid cavity, and as much more to secure it there solidly. I have seen no case of so-called cure, where I could not distinguish the head of the femur, when the thigh is flexed upon the pelvis; and I regard no case cured where this sign can be distinguished, together with a slight increase of projection and elevation of the trochanter, an appreciable shortening of the limb, and much difficulty of abduction.

KNEE JOINT.

The articular surfaces are so large, and the means of union so numerous, that luxation at the knee-joint is rarely seen.

Two kinds of complete luxation have been observed at this joint; the one, a consequence of direct violence, and suddenly produced; the other, a gradual result of disease. Duverney believed it impossible that the knee should be luxated forwards; or, indeed, that a true luxation should happen in any direction. Boyer, who, in the main, agrees with Duverney, says that complete luxation of the knee backwards appears to him impossible. Certainly, the case of luxation "inward," extracted from La Motte, by Boyer and Sir A. Cooper, was not well interpreted by them, for it was, unquestionably a luxation backwards. Opposed to Duverney, who does not admit luxation forwards, is Boyer, who cannot conceive a luxation backwards, and as other authors deny a lateral luxation, practitioners naturally feel embarrassed. I have no hesitation in saying, that both backward and forward luxations are possible, without fracture, and without laceration of the integuments.

The oldest case of complete luxation on record is that of Meyer, which was forward; it was reduced, and the patient was cured. Heister, in his *Institutes*, describes a backward luxation, the result of which was no less fortunate than that of Meyer; that of La Motte was similar; so was that of Walshman, with this exception, the tendon of the triceps was ruptured. Sir A. Cooper has seen it twice, forwards, both

cured. Sanson saw, at the Hôtel-Dieu, an old fat woman who had complete backward luxation, cured in three months. Duviivier saw a case of forward luxation also cured. There are several other cases on record, among which the most detailed is that of Blanchard (*Mém. de l'Acad. Royale de Méd.*, t. iv. p. 451), and that of Louyer Villermay, the subject of which was the celebrated Benjamin Constant. Altogether we may find twenty-four cases of a luxation, which many men have regarded as impossible; ten were cases of backward, and fourteen of forward luxation.

As to complete lateral luxation, doubt may still be entertained; in one of Sir A. Cooper's cases, and in that of Gerdy, there was a certain extent of lateral displacement, but then they were cases of luxation forward.

Causes.—Relaxation of the tissues around this joint does not seem to have predisposed the greater number of those patients to luxation: most of them were young and vigorous, and the accident was the consequence of great violence. They seem to have been produced by some object fixing the foot, while the body and the thigh were pushed backwards, forwards, or laterally, with force. The thigh may be the fixed point, and the leg be carried in either direction. In the first case the tibia glides upon the condyles of the femur; in the second, the femur glides upon the surfaces of the tibia. The ordinary motions of the joint, to whatever extent they may be carried, are incapable of causing dislocation.

Symptoms.—This accident is usually easily detected; the limb is shortened, is usually fixed, though it is sometimes very moveable; commonly, the deviation from the natural direction is less than might be expected, and, usually, a considerable numbness is experienced; the deformity at the knee is considerable, varying, however, with the kind of luxation. In the dislocation forward the condyles of the tibia project considerably in front of the inferior extremity of the femur; the patella is higher than natural, and inclines to the right or the left; the condyles of the femur project backwards, and press against the popliteal artery, vein, and nerve. The dislocation backwards is characterised by the projection forwards of the condyles of the femur, and the depression of the patella. Looking backwards, the leg does not seem shortened; looking at it in front, it appears much shortened. The ligamentum patellæ, which in the forward luxation is applied upon the anterior border of the head of the tibia, is here stretched like a cord under the extremity of the femur; the articular notch of which is distinctly felt. Pushed backwards, the vessels and nerve are flattened upon the posterior inter-

condyloid notch of the tibia; the general shortening is less than in the former case. If seen at once, or before there is much infiltration, these characters are so marked that a mistake can scarcely happen; but when the tumefaction is great, and it usually supervenes rapidly, all those points must be borne in mind.

Experiments upon the dead would seem to prove that a luxation forwards cannot occur without rupture of the crucial ligaments; and the lateral ligaments occasionally share the same fate. Similar experiments would lead to the opinion, that the luxation backwards might happen without the lateral or inter-articular ligaments suffering. We see, therefore, that, *ceteris paribus*, the luxation forwards ought to be more easily distinguished than the posterior. Mistakes have sometimes arisen between these luxations and fracture of the inferior extremity of the femur; but then the crepitation, the facility of rendering to the limb its natural conformation, the shortening when traction is suspended, should render this mistake unfrequent. Left to themselves, dislocations of the knee-joint are very dangerous; for the circulation and innervation are commonly interfered with, and gangrene may be the consequence; and for some time considerable disturbance at the articulation is the ordinary consequence.

Prognosis.—To the older surgeons this accident appeared so formidable, that amputation was recommended as the only remedy. Percy believed that if we followed a different plan, and attempted to save the limb, for every one saved a hundred would be lost. Heister's opinion was similar; Larrey defends it. As a general rule, the principle of Percy is improper; amputation is indicated only where there is rupture of the ligaments and vessels, a large wound communicating with the joint, and such an infiltration as would render gangrene almost inevitable. Except in such cases reduction should be attempted, and the limb, if possible, saved. Of the twenty-four cases, seventeen recovered the use of the limb; of the remaining seven, four were in the condition for which amputation should have been performed. Three were cured by it, two died without operation, and two were for a long time infirm. In each case, where reduction has been fairly tried, it has succeeded—without suppuration, without much inflammation, and in the space of a month, two months, three months, or four months. Sometimes much stiffness remains in the joint; it was the case with B. Constant, whose body was examined after death, and the crucial and internal ligaments were found ruptured.

Treatment.—The reduction is not often difficult, and it does not usually require

great force. The patient lies on a bed, or table, or chair; the pelvis should be fixed as in a luxation of the femur. If it be a luxation backwards, extension is made upon the foot. Luxations forward require that the leg may at first be carried slightly backwards, and then the femur must be pushed briskly downwards; and as we have no capsular ligament to be ruptured, considerable extension may be made. The reduction is accompanied by a noise, which is heard by those around, and felt by the patient. In simple cases, after reduction, absolute rest for some weeks is all that is necessary. Cold lotions and careful bandaging will usually subdue tumefaction. In robust subjects, where pain is great, and inflammatory action such as to threaten suppuration, bleeding may be necessary. At first the limb is maintained in a semi-flexed position; but after eight or ten days slight movements of flexion and extension may be carefully attempted, and increased so as to admit of the patient trying crutches at the end of a month. If the injury be considerable, a longer period of rest is indispensable; it must not, however, be forgotten, that a too prolonged inaction may favour anchylosis.

Incomplete luxations of the leg are never found to occur either forwards or backwards. In fact, it is almost impossible that the facettes of the tibia should partially abandon the condyles of the femur in the antero-posterior direction. Morgan's case was clearly a lateral one. When the displacement occurs outwards or inwards, the spine which separates the facettes changes the relation of the articulation. When the external condyle of the femur rests on the internal cavity of the tibia, we have a luxation outwards, and *vice versa*. It would seem that another kind of lateral luxation may occur; two patients at Guy's Hospital were said to present the condyles of the femur between the semi-lunar cartilages and the external border of each articular facette of the tibia; but these small differences would give rise to endless variety of description.

The causes of incomplete luxation are similar to those which are complete. A false step, a violent exertion outwards or inwards, acting on the side of the knee, while the foot supports the weight of the body; or upon the foot, the thigh being solidly fixed; a sudden twist of the leg or thigh.

A single condyle may be luxated: when it is the internal, and it is turned forward, there is seen above a deep depression; the patella is turned outwards, as if luxated upon the external condyle, the internal condyle is carried far back;

if the luxation be backwards, the patella is turned inwards; the projections and excavations being inverse to the former. In the internal lateral luxations, the projection of the tibia, and the depression of the femur on the internal side of the knee, whilst an opposite disposition exists on the outside, the patella remaining fixed upon the internal condyle of the femur, are sufficient for diagnosis: the opposite displacement presents characters, inverse to the other. If, to the lateral displacement be joined rotation, the projections and depressions are modified accordingly.

The luxation which fixes the condyles of the femur between the fibro-cartilages and the edges of the facettes of the tibia, will present similar characters, but less decidedly marked. All these displacements render voluntary motion of the leg almost impossible. If we may judge from the published cases of lateral luxations, whatever may be their variety, they seem more rare than complete luxations, though an opposite opinion has existed. Sir A. Cooper relates three cases, one external, two internal. Costallat has published a fourth. Morgan a fifth. Larrey a sixth. A seventh and an eighth occurred at Guy's Hospital.

The *prognosis* is generally less unfavourable than when the luxation is complete: in Larrey's case, however, amputation was necessary, but there was much injury to the soft parts. A case which is mentioned by Cooper, as having occurred at Barbadoes, was very threatening, and at last the cure was incomplete: in the other cases neither life nor limb seems to have run risk. The reduction is not difficult, and four or six weeks have in some cases been sufficient for restoration; but a knee cap is sometimes necessary. Reduction being accomplished, the after consequences depend upon the extent of injury to muscles, vessels, ligaments, &c.

Luxation of semi-lunar cartilages.—In the work of Hey, we find described, a disease which he termed internal derangement of the knee-joint, but which Cooper describes as luxation of the fibro-cartilages. The accident has occurred suddenly, either in walking or in bed, when the great toe hitched in some hole in the sheet, and forced the leg to turn outwards. A pain is suddenly manifested, and is renewed as often as the patient tries to completely extend the limb, disappearing when the limb is at rest. Forced extension and flexion are the remedy recommended by Hey; but Sir A. Cooper has shown that this means may fail: indeed, it is very easily reproduced. To prevent it, and to support the articulation, an elastic knee-cap is generally necessary. Nothing can be more obscure

than this affection. How can we tell whether it be a case like that described by Reid, a rupture of the cartilage, a displacement, or whether it be a loose cartilage in the ordinary acceptation of the term? To reduce them we must follow the directions of Sir A. Cooper and Hey, flex the leg strongly, rotate the foot outwards, or it may be briskly extended. If both means fail, flexion and traction in all manner of directions may be alternately employed; and, if we succeed, the patient must use the leg cautiously for some time to prevent a recurrence, or he must wear a knee-cap.

Slow or spontaneous luxation of the knee is not rare. Its direction is sometimes outwards, rarely inwards; most frequently backwards, scarcely ever forwards. Ulceration of cartilages, destruction of ligaments, and similar diseases, are the habitual causes of this displacement. If the limb be semi-flexed, and the thigh be better supported than the leg, the tibia is gradually luxated externally; by the same mechanism it glides internally, if the limb be lying on the inside. If it be so frequently displaced backwards, it is that in spite of pillows placed in the ham, the flexor muscles of the leg, kept down by the heel as a fixed point pull at the head of the tibia, as much better as the tendency of the extremity of the femur is to project forwards. Instead of acting as above, by the inclination of the extremity of the tibia, the displacement sometimes happens from the extreme flexion or extension of the whole leg. Sir A. Cooper describes a case of Mr. Cline's, in which the leg was united so as to form nearly a right angle with the anterior surface of the femur, so direct that the sole of the foot was directed forwards. Velpeau describes a case quite as marked, though an inverse condition; incomplete ankylosis is the ordinary result. Hydrarthrosis, an extravasation of blood, certain diseases of the soft parts capable of sensibly elongating the envelopes of the knee, may, it is said, in disappearing, give rise to luxation. Velpeau saw such a case, in 1836, at La Charité. A patient, 45 years old, for six months had the knee as large as the head of an adult. Two large blisters were applied, and in a fortnight complete resolution was the consequence. It was then discovered that the tibia was luxated backwards by its own weight; that by extension, made with the hands, it could easily be brought to its proper place; but, when she stood, it could, like Polichinella's leg, be moved in every possible direction.

OPERATION IN A CASE OF VERY LARGE STRANGULATED HERNIA,

WITH SOME REMARKS ON THE TREATMENT OF SIMILAR CASES.

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[For the London Medical Gazette.]

On Tuesday, June 30th, I was requested by Robert Cook, Esq., Surgeon, of Gainsborough, to visit Mr. B. C—s, a gentleman of eighty-five, who had been his patient for some years, and who, for a considerable period, had been the subject of a very large irreducible hernia. The day before he had been to a village feast, and partaken, perhaps, a little more freely than was his custom of the good things of the table; and, at dinner, of some cherries and rather old and slightly acid ale. Upon his return, he complained of great pain, referred to the pit of the stomach; headache; and sickness, with frequent vomiting. Upon examination, we found that the hernial sac, which nearly reached down to the knees, was more than usually distended; and that there was a feeling of great tenderness upon even gently handling it. The tongue was much coated; the pulse 120. Before I came, the surgeon had very properly taken away some blood, which was covered with a particularly thick yellow crust, and very much cupped. He had also thrown up several clysters, and given repeated doses of calomel, followed by sulphate and carbonate of magnesia in mint water. This was the state of our patient at the moment when I first was called upon to see him. Here was a case of strangulated hernia in an old man upwards of eighty-five; that hernia was irreducible, and had been so for years; that hernia was so large, that the abdomen was shrunk to one quarter its natural size; the sac, which, as I have before said, reached nearly to his knees, evidently holding the greater portion of the intestines: an operation appeared to offer the only chance of safety, however; and it became a question when and how it was to be performed?

Mr. Cook fully coincided with me that an operation was indispensable;

"and," continued my old and experienced friend, "the sooner in this case the better; we have now a chance of saving the old man's life, and it is useless to operate when death is knocking at the door; when the patient has become worse; when there is vomiting in large quantity, mixed with bile and vitiated mucous secretion; when troublesome hiccough comes on; it is too late then, and, in my opinion, the great majority of cases are lost from operating too late." The above remarks cannot be too carefully read—too deeply impressed upon the mind of every student: they come from a man who for the last thirty years has been engaged in active practice; who has seen many times the folly of delay, and the advantage that arises from operating as soon as possible. I have of late had occasion to operate several times in cases of strangulated hernia, and am fully satisfied that, in the great majority of cases, the patient does not die from the operation, but from the operation being delayed too long. It is no kindness to sit by the bed-side of a man until he dies of strangulated hernia, and then to elaim from his friends credit for more than ordinary kindness and attention. After every reasonable means have been tried to return the strangulated bowel in vain, an operation must at once be performed, for

"Gratia ab officio quod mora tardat abest."

Let me, however, again and again repeat, that in no case are delays more dangerous than in strangulated hernia.

As soon as the patient could be induced to submit, I performed the operation in the following manner:—An incision three inches in length was made in the integuments covering the tumor, commencing a little above the external ring; perhaps the incision might extend for two inches and a half below, and one inch and a half above, the external abdominal ring; for I concluded, from the very large size of the hernia, that we should find the seat of stricture either at, or very near to, the external ring. After cutting through a very thick covering of fat, the tendon of the external oblique muscle, and the fascia of the cord, which the reader will remember is derived from the tendon of the external oblique muscle, a little below the ring, was exposed. This fascia was very carefully divided upon a director, as was

also the cremaster muscle. I then passed my finger upwards, and introduced a common hernia knife upon it, divided the ring to the extent of an inch, which enabled both myself and friend to feel satisfied that the stricture was divided, and the strangulated bowel relieved. Some little difficulty was experienced in dividing the stricture. I had experienced a similar difficulty before. I was operating with a common hernia knife, the probe-point of which was much too long. In this case it was no easy task to get the end of the knife under the stricture, and that difficulty was considerably increased by the length of the probe-point. You have to push this along under the stricture before you can turn the cutting edge upwards, and thus bring it to cut the part. I was not, on this occasion, operating with my own knife; but I have had one made by Mr. Pepys, with which I have twice performed the operation, and, from the blunt point being shorter, this difficulty was avoided. I have mentioned this to one or two surgeons, who complain that they also have experienced much trouble from the cause just alluded to.

Shortly after the operation, the poor old gentleman said "He was much better, and that the pain of cutting was nothing to the agony he had experienced before." The pain was gone, the hiccough no longer present, and he enjoyed several hours of calm and refreshing sleep.

I met my friend Mr. Cook every day in consultation until the time of his death, which took place three days after the operation, from inflammation of the peritoneum and bowels: it was, however, satisfactory to feel that the operation had relieved our patient from the stricture under which the bowel was labouring; and had it not been for his advanced age (upwards of 85), there can be little doubt but that it would have been successful. We were sorry that no post-mortem examination was allowed; and I am sorry to add that this is but too generally the case in the country: there is a feeling against it that cannot be got over—a feeling we would fain hope did not exist in this nineteenth century. The present case was one of great interest; it was one of importance to the public; and I do say that when an examination of the body, (conducted, as it always is, in a way that tends not

in any degree to disfigure the mortal remains of those who have been dear to us), can be made of use to mankind at large by the light it throws on the treatment of disease, the relations and friends of the deceased do a positive injury, a direct act of injustice, to society, by saying "no examination after death shall take place." Moreover, it is an act of cruelty also to the surgeon or physician who has attended the poor man during life. I always like the satisfaction of knowing that all has been done that could be done for my patient, and such I am certain is the feeling of the whole of my professional brethren.

Let me now make a few remarks upon cases of very large hernia, and the plan of treating them.

In the case in which I last week operated, it was unusually large; the testicles were wasted, and the penis buried in the tumor. In truth, the skin of the penis and lower part of the abdomen were stretched over it; the cavity of the abdomen was also considerably diminished; in fact, it adapts itself to its contents—a circumstance which must never be lost sight of. The case of Mr. R. C—s was an old oblique inguinal hernia; the neck of the tumor was shortened, and the openings of the canal approximated, and more in a direct line, the epigastric artery being a little behind and to the inside of the neck. It is always more or less displaced in cases of old standing. The direct hernia passing at once through the parietes of the abdomen opposite to the external ring, does not, until it has reached that point, come in contact with the spermatic cord, having on the outer side of its short neck the epigastric artery. The coverings of the two tumors are not—cannot, in fact, be the same. Those of the oblique are the coverings of the cord; the coverings it has peeled off from it. The coverings of oblique inguinal hernia are a prolongation of the transverse fascia, the cremaster muscle, some fibres from the external ring, and the superficial fascia of the abdomen.

In the case more particularly before us the strangulation had arisen from two causes: first, from the accumulation of its solid, fluid, and gaseous contents, its volume was much increased, and its circulation of necessity retarded; and secondly, from another portion of intestine having been forced down; for

though the opening through which the bowels had originally passed was large enough to admit it, it was not sufficiently so to contain the additional portion that had been forced down. Among the causes of hernia in the first instance, and strangulation afterwards, from the forcing down of an additional portion of intestine, I have found, from frequent inquiry, that the violent exertions of patients, habitually costive, to expel the hardened feces, are the most frequent. I have no doubt that violent straining at stool, in this instance, had forced down additional portions of the viscera, and thus induced the serious distress and the alarming danger, the operation was undertaken to relieve. But the hernia was also irreducible, and had long been so. This arose from the very great contraction of the abdomen owing to the long continued expulsion of its contents; from the very small opening through which the viscera had passed causing the parts protruded to become engorged; and lastly, from the nature of the contents of the tumor; for I have little doubt but that the hernial sac contained either the sigmoid flexure or the caput coli; we might also add, by an accumulation of fat in the appendiculæ of the large intestines, which were protruded, or some induration of the omentum.

Before I conclude, by offering some reasons for operating in the manner above mentioned, let me quote the words of Mr. Liston, which I have read since the former portion of this paper was written, and let me record them here in confirmation of the opinion just expressed of the folly of delaying the operation. He says, "the external applications employed to reduce hernia are various, but no external or internal remedy can attenuate and reduce the hernial sac, remove adhesions, or produce an alteration in the tendinous or rigid apertures." It cannot, therefore, I repeat, be of use to continue the taxis hour after hour; let a fair trial be given to it, and other means, and if they fail we can have no excuse for delaying the only plan of safety, viz., to divide the stricture, and thus release the bowel. In the operation above mentioned the stricture was divided external to the sac. Sir A. Cooper, in his valuable work on hernia, says "I know of no situation in which a man is placed under greater difficulty, than in which

a surgeon has to operate on a hernia of very considerable size, and finds a great quantity of intestine on the lap of the patient, and the parts so diminished, from the length of time the hernia has existed, that there is no room to return the intestine which has descended. He tries to push back the intestine, it eludes his efforts, and after repeated attempts, when he has at length succeeded in returning a considerable portion of it into the abdomen, the whole rushes out again into the scrotum. So much handling of the intestine necessarily leads to such a degree of inflammation as to endanger the life of the patient." (Lectures on Surgery, p. 224.)

But this is not the only danger: however carefully we may handle the intestines, however gentle our manipulations in attempting to return them, they nevertheless burst, scattering the feces over the hands of the operator, and the patient either sinks in a few hours, or dies at the end of some days, from want of nutrition; for the part which gives way will generally be some portion of the small intestines, and the poor patient must sink from constitutional irritation and inanition; for that degree of lacteal absorption necessary to the support of life, cannot take place.

It must appear evident to every practical surgeon that after a bowel has become strangulated for even a very few hours, it is in an incipient state of inflammation: in all cases that inflammatory action is increased by roughly handling the parts, and therefore the employment of the taxis, if continued too long, or used with too much force, no doubt tends to increase the danger of the patient, and adds not a little to the causes tending to make any operation that may be performed unsuccessful. This reasoning applies to all cases; but what must be the consequence in such as we are more particularly discussing in the present paper—what the consequence of endeavouring to return any additional portion of intestine that may have come down into an old hernial sac—the hernia having existed for years, and for years being irreducible? We think that in all cases such practice is likely to be productive of the greatest danger, but more particularly in cases of old and very large hernia: by such long and continued attempts at reduction the bowels become bruised and seriously injured, and,

like any other contused tissues, must inevitably most seriously suffer. Am I exaggerating the dangers attendant upon such a system? By no means; but what must be the danger, what the result, if the operation be performed in the old way? if the hernial sac be divided, and the protruded intestines be received into the hands of the operator? if they remain there for the space of half an hour, continually pushed up, as often to fall down again? Before the operation they have been perhaps much injured by fruitless attempts at reduction, and, like any other part of the body, will stand a much better chance of recovery if their surface be not exposed; will stand a much better chance of recovery if not obliged to undergo, for a long period of time, the attempts made to return them.

Again, even if the bowels had never been injured at all, even if a patient were in a state of perfect health, under the most favourable circumstances, what would be the effect of opening so large a tumor, and exposing the intestines? The most hazardous inflammation, increased by breaking down adhesions which had been present for years. And even if the abdomen was able to contain the contents of the tumor, (which in the old gentleman I operated upon last week was quite out of the question) what surgeon would have the temerity to return them? for there is every probability, every reason for supposing, that the return of parts which had so long been protruded, into the abdomen, would bring on the most alarming symptoms.

But, for the reasons already stated, they cannot be returned, and, what is more serious still, they cannot be retained in the sac which has been improperly opened. In the *Journal of Foreign Medicine* (No. 15, page 460) a curious case is mentioned in which the sac was divided in a very large scrotal hernia, and about one foot of the colon which was contained in it could not be returned. The integuments were not sufficiently large to cover it; still its surface granulated, the skin, as the cicatrix contracted, extending itself over the swelling, which also diminished in size, and in a few weeks the man was discharged cured.

In such cases, then, we must avoid pulling the parts about, and perform the operation as soon as possible; we must not dream of opening the hernial

sac, breaking down the adhesions, and attempt to return into the abdomen that which it is too contracted now to hold; nor must we run the risk of exciting inflammatory action by the exposure of the bowels. The rule of Sir A. Cooper here holds good, viz., "That when the tumor is of long standing, exceedingly large, perhaps extending more than half way down to the patient's knees, and its contents have never admitted of being completely reduced, the indication is to divide the stricture, provided a strangulation take place, but without laying open the hernial sac, or attempting to reduce the part."

In performing the operation great care must be taken that the stricture is not only divided, but divided fully. In the present case, after freely using the knife, I requested my friend to introduce his finger, and Mr. Cook thinking that the parts might even be a little more freely dilated, I gave him the knife, which passing along his finger the parts were relieved sufficiently to remove from my mind all apprehension as to the state of the stricture. Dupuytren informs us that in eight out of every ten cases of strangulated bubonocoele, the stricture is seated at the neck of the sac, and he supposed that this took place from some alteration in the structure or nature of the peritoneum at this part. But Mr. Cooper well remarks, that, in a recent protrusion, strangulation cannot depend upon any thickening of the neck of the tumor (vide Cooper's Surgical Dictionary, 7th edition, page 724), and he admits that large external swellings were not very liable to be strangulated in this way. The justly celebrated Dupuytren, (Clin. Chir., vol. i.) has also made some valuable remarks upon the form of the tumor, and directs us to the seat of the stricture, by remarking that "when it is situated at the external ring the tumor formed by the hernia does not reach above this point; the inguinal canal, therefore, is undistended, soft, and indolent to the touch, while the ring itself is hard and tense; on the other hand, when the stricture is at the neck of the sac, that is to say as far up as the superior orifice of the inguinal canal, this is always full, hard, and tense."

In some the stricture extends the whole distance of the inguinal canal, and here we must lay its upper surface open its whole length.

My space will not, however, allow me to dwell upon all the varieties of stricture that are met with; I may, however, trespass to remark that two strictures may exist, a slight one at the abdominal ring, and a second and more serious one at the neck of the sac. This very important fact must ever be kept in mind, for if the surgeon supposes that the stricture exists at the abdominal ring, and divides it only, the bowel is pushed into the inguinal canal, and not into the abdomen: should another stricture exist higher up, in this case the symptoms continue, and death must inevitably follow, sooner or later.

Dupuytren remarks, that when the strangulation takes place at the upper portion of the inguinal canal, the danger is much greater, and the parts sooner become gangrenous, because, the edges of this opening are very sharp, and make very great pressure on the neck of the sac: the abdominal ring is wider and has blunter sides; strangulation in this situation is therefore slower.

Little need here be said upon the treatment of the bowel, should it in any instance be found mortified. Mr. Lawrence recommends it to be freely opened, to obtain at once that relief (viz. evacuation of its contents,) which nature seeks by the process of gangrene. (On Ruptures, p. 299.) Nor must we forget that by this plan Sir A. Cooper snatched from the brink of the tomb a female who was pregnant at the time of the operation, and was afterwards delivered of a child.

Treatment after the operation.—In the first place, the patient must be kept in bed, a pillow placed under the knees, and every means taken to relax the muscles of the abdomen, by placing him in as easy a position as possible. In large cases the hernia must be supported. A large pad or small pillow will answer very well. If the sickness frequently present continues, perhaps the following draught will relieve it sooner than any other:—

℞ Sesquicarbonatis, gr. xx.; Aquæ Cinnam, ℥ss; Liq. Opii. Sed. ℥iv. M. ft. haust. tertia quaque hora cum coch. med. succi limonis sumend.

Although I have never given or seen it used, I am inclined to think that in such cases perhaps this mixture might be substituted with advantage. I shall certainly give it a trial.

℞ Liq. Opii. Sed. ℥viij.; Acidi Hydrocyanici (Scheels), ℥iv.; Potass. Bi-

carbonatis, ʒj.; Aquæ, ʒvj. Misce.
Capiat quartam partem quâque 3tia.
horâ si opus fuerit.

Evacuations from the bowels must be at once promoted by clysters and small doses of sulphate of magnesia—a dram dissolved in peppermint water every two or three hours; the recumbent position must also be maintained, as any exertion will cause the bowels again to come down. Inflammation of the bowels and peritoneum must be attacked by bleeding, calomel and opium, fomentations to the part, and leeches; doses of castor oil will be the best aperient. Should diarrhœa come on, a mixture long used by my worthy friend, Mr. Carrick, R.N., surgeon, Kensington, is very useful, and often affords relief.

R Confect. Aromat., ʒj.; Sodæ Sesquicarbonatis, ʒj.; Aquæ Menthæ Pip., ʒvss.; Tr. Card. co., ʒss. M. Coch. ij. mag. pro re natâ.

Opium can of course be added if required. After the operation, the diet must at first be kept low; but when all danger of peritoneal inflammation is past, this plan must be changed, and wine, quinine, cordials, and a generous diet allowed. We must remember, however, that though we have succeeded in curing the patient, we have not prevented, by the division of the stricture, other portions of the bowel coming down; and, therefore, we must by proper means guard against such an unfortunate occurrence.

In all cases of large irreducible scrotal hernia, the tumor must be very carefully supported by a proper bandage, and injury to the part avoided, as a severe blow might occasion rupture of the bowel, and death. We shall do well also to caution our patients as to their diet and mode of life: excesses of every kind must be most studiously refrained from. In the case of Mr. R. C—s, now before us, strangulation of the bowel was to be traced to this cause. Warm aperient medicines must therefore frequently be taken; as the compound rhubarb pill at bed-time, with some aperient during the day. Clysters of warm water will be of great use; in fact, the bowels must not be overloaded, either by a too free indulgence at the table, or an accumulation of hardened fæces. When it can be taken, a dose of castor oil now and then, at bed-time, will answer every purpose; when it

cannot, the following mixture may be used—

R Magn. Sulphatis, ʒiv.; Infus. Sennæ, ʒv.; Tr. Card. co. ʒj.; Ess. Ment. Pip. ʒxxx. 4tâ pars horâ decubitus.

This will be a mild and useful aperient, and much better than the quack pills with which every shop is now filled, all containing more or less of blue pill. I was consulted only a short time ago by a victim to this system. How long, I ask, will the public be thus blinded? How long will the government allow a portion of the revenue to be derived from profits arising from both the wholesale and retail distribution of poison in the shape of vegetable pills, and every other form, both solid and liquid?

The importance of the subject has led me far beyond the limits I had at first marked out. Hernia is a disease so frequent, of such every-day occurrence, that we are called upon to understand it in all its forms, in all its bearings; to understand not only how to perform an operation, but also how to adjust a truss. For my own part, until I was the dresser of Mr. Babington, at St. George's Hospital, I knew but little of this important procedure; and, if I am not mistaken, many leave our hospitals without ever having seen one put on, much less taking the pains to learn how to do so themselves.

Mr. Aston Key dwells at great length upon the danger of attempting to expose the bowel by opening the sac in a large hernia; and adds, that when general inflammation precedes the operation, the knife seldom succeeds in checking it.

Cases of so large a nature as the one now recorded are certainly not very common. Sir A. Cooper has operated in three cases (Lectures on Surgery, p. 225). He has, however, left in his valuable work abundant information as to their treatment; and he most eloquently urges the attainment of that knowledge of anatomy which alone enables a man to operate with advantage to his patient. We may look on, and think it very easy to divide part after part; and so it is to the man who has gained that information which this surgeon urges all to acquire. An examination of his writings, and the works of Dupuytren, Cloquet, Lawrence, Guthrie, Key, and others too numerous to mention, will afford every facility to the study of this interesting and im-

portant disease; they will, in fact, induce the student to examine the subject for himself, in the dissecting-room; induce him there to read the book of nature—a volume ever open: and amply will it repay the most attentive and diligent research.

Bath Place, Kensington,
July 1840.

VACCINATION.

To the Editor of the Medical Gazette.

SIR,

YOUR correspondent from Cheltenham is quite correct. There is a typographical error in page 544 of your current volume. The word *vaccinated* is printed instead of *unvaccinated*, in line second of the first Statistical Table; but the error seemed to me too obvious to require formal notice, as the words *total unvaccinated* immediately succeeded, and the preceding numbers were added together. As your correspondent is so sensitive on the subject of typographical errors, allow me to call your attention to his own letter, p. 626, line seven from the top, where the word *manifest* is printed instead of *manifest*. I am the more inclined to notice this erratum, because, though your correspondent assures us that it is a "*manifest* duty to employ lymph taken from healthy subjects only," he does not specify the reasons for such careful selection: those reasons are, I dare say, manifest to him, but I doubt if they will be equally manifest to other people, more particularly as he is so perfectly in accordance with you in the opinion you lately expressed touching the impossibility of communicating any other disease along with cow-pox. It appears from your correspondent's letter that some practitioners in Cheltenham entertain the notion that such an occurrence is possible, while you and he hold "that there is no proof whatever that with cow-pock any other disease can be communicated, whilst all facts and probabilities militate, *in toto*, against such opinion." Superficial observers might naturally say, if no disease can possibly be communicated with cow-pock, it is *manifestly* indifferent whether a healthy or unhealthy subject be selected: to prevent such a misconception, and at the same time to discuss the pathological question which you have raised, I venture now to address you.

As this is not a matter of medical statics, and, therefore, not open to be called in the singularly felicitous language of your correspondent, "wash and vapidity good only for the gutters," I hope for his indulgence as well as yours while I offer a few observations upon it.

It is hardly necessary to say that the extreme anxiety manifested by parents in the selection of a subject from whom their children are to be vaccinated, arises from an apprehension that scrofula may be communicated by and with the vaccine lymph: the fears of parents seldom extend beyond this; and the idea of communicating insanity, epilepsy, or gout, is, I believe, rarely, if ever entertained. No grounds whatever exist for supposing that scrofula may be thus communicated, and when we can calm the apprehension of the parent on this score, we have done all that is ever required from us. But your position takes a wider range, and affirms that the *febrile* contagious diseases cannot be thus communicated, and this is a more difficult question to decide.

It is well known that if the lymph of a vaccine vesicle be employed while variola co-exists, such lymph cannot be relied on for communicating the vaccine. There is at least an equal chance that the resulting disease will be small-pox. I have heard the particulars of a case where erysipelas and cow-pox co-existed, and the lymph being unfortunately taken, both diseases were communicated to the child. I have no experience bearing on the question whether measles can be communicated along with cow-pox, but it would be going too far to say that such a thing is impossible. As little have I to say practically on the question of communicating syphilis by means of the vaccine virus, but I am not prepared to deny the possibility of such an occurrence. Dr. Jenner, as we all know, laid great stress on the danger of vaccinating while the system was pre-occupied by herpes, lepra, or psoriasis. I have frequently seen the vaccine vesicle assume the leprous character, nor can I doubt that this combination of the leprous and true vaccine disease would be propagated, if any one were so unwise as to employ such degenerated lymph. The Germans have lately made many experiments to determine the effect of vaccinating persons labouring under true psora, and they have found reason to believe that the two diseases do not

interfere with each other; but I confess, I should take vaccine lymph from the arm of a child labouring under an inveterate itch with many fears as to the result.

These considerations incline me to think that you have expressed yourself on the impossibility of communicating other diseases with the vaccine lymph somewhat too unreservedly, and that the unbelievers at Cheltenham are not so far wrong as your correspondent would wish us to believe; but I am open to conviction, and shall be much gratified to have some additional light on this curious branch of vaccine pathology.

The reasons, then, why we select lymph from healthy subjects are the following: first, because in healthy subjects the course of the vaccine is *cæteris paribus* the most normal; secondly, because we thus exclude the *chance* of communicating any other disease with the cow-pock.—I am, sir,

Your obedient servant,
GEORGE GREGORY, M.D.

31, Weymouth Street,
July 11, 1840.

CASE OF EXTRAORDINARY DEVELOPMENT OF THE MAMMÆ IN THE HUMAN ADULT.

To the Editor of the Medical Gazette.

SIR,

THE exceedingly rare occurrence of a case similar to the following has induced me to forward a report of it to you. It may prove interesting to the physiologist, although the extraordinary effects are to be traced to a primary pathological condition for their cause.

I am, sir,
Your obedient servant,
JOHN GORHAM.

Tunbridge, Kent, July 1840.

William Rogers, æt. 61, a native of Chatham, and by trade a fisherman, states he has generally enjoyed good health. He married at the age of 33, and has had children, the last being 13 years old.

Four years and a half ago he went into the Queen of Spain's service, having been previously examined in the ordinary way, and pronounced quite fit for service, being a strong hale man in every respect.

On attempting to jump over an entrenchment in a retreat, and not being able to clear it, the anterior part of the body, in the situation of the xiphoid cartilage, or thereabouts, was projected with great force against the upper and sharp edge of a wall; he was thus driven backwards, and fell on his back. While lying as if dead, one of the Carlists stabbed him with a bayonet a little below the ribs on the left side, and immediately afterwards he received a sabre wound over the frontal bone of the same side. On regaining his senses he was able to walk a short distance, and was immediately put to bed. The symptoms induced by the accident are referrible to the following parts: the spine—lower extremities—bladder—rectum—the testicles—the mammæ—and the hair.

Spine.—When in Bilboa hospital, he had great pain in the vertebral column, and for this he has been cupped repeatedly. He has now a complete angular or Potts' curvature; the trunk is bent forwards, and the spinous processes of the vertebræ backwards. Pain is complained of, and this, on percussion, appears to be most evident at about the centre of the dorsal region, and also of the lumbar. There is constriction of the upper part of the abdomen.

Lower Extremities.—The right lower extremity is constantly affected with cramps, and is generally colder than the left. He can walk a distance of five or six miles a day.

Bladder.—His urine was not drawn off for about fourteen days after the accident, a complete paralysis of the bladder apparently then existing, but since that time he has been able to retain it.

Rectum.—The alvine dejections were passed at first with great difficulty, sometimes involuntarily, and at others with pain. Since the collapse of the diseased bones, however, and the recovery of the patient, with the consequent deformity, all these symptoms, more immediately dependent on the spinal lesion, have disappeared.

The most remarkable alterations produced, however, are to be found in the three last-named parts—the testicles, the mammary glands, and the hair.

Testes.—Ever since the accident these glands have wasted. That on the right side is soft, pulpy, and of the size of a small nutmeg. It is drawn upwards,

close to the external abdominal ring. The left testicle is somewhat larger, but still atrophied, and, as in health, is more pendulous than its fellow. As regards their functions, the poor fellow has not had the slightest sexual desire since the receipt of the injury.

Breasts.—About three weeks after the accident the integuments around each nipple became painful and swollen, and a tumor, analogous as I imagine to the *areolar* of Sir A. Cooper, was formed. Leeches and poultices were applied; however, the increase of substance did not stop here; for as the testicles decreased in size, hypertrophy of the whole mammary region became more and more evident. Each breast is at this period of the size of an orange, glandular to the touch, and pendulous.

Hair.—This on the face is of very tardy growth, so that he is obliged to shave much less frequently than formerly.

As far as I can judge, from seeing him only for a short time, he is a quiet and inoffensive person. His countenance struck me as being, if not effeminate, yet, certainly devoid of that appearance which so often predominates in the military who have been chosen from the lower orders of people. His voice was subdued; and he received a small trifle placed in his hand as a compensation for allowing me to make a few remarks upon him with apparent gratitude.

His spinal affection it is true might have caused all this; and, therefore, the few circumstances here noticed I could not wish to be looked upon as a part of the narrative of the case.

It was thought at Westminster Hospital that a lacteal secretion might possibly exist, and a cupping-glass was had recourse to, but on producing a partial vacuum no milk issued.

A cast of the head has been taken, he informs me, by Dr. Elliotson; and one of the head, unshaven, together with the bust and other parts of his body, by Mr. Deville. The occiput is very flat; but as the function over which the cerebellum partly presides was quite normal and active before the injury, little weight must be attached to the circumstance.

The pulse is 56, and the respiration 20.

TREATMENT OF CROUP.

To the Editor of the Medical Gazette.

SIR,

OBSERVING in your number for July 3d ultimo, a paper by Professor Hannay, on the treatment of "Croup," I beg to offer the following remarks on the treatment of that fearful disease, deduced from actual practice. I observed the cases reported in the British and Foreign Medical Review, No. 2, and might, like Dr. Hannay, had not my opinion been previously formed from actual pathological observations, come to the conclusion that sulphate of copper would act as a specific remedy in cases of acute inflammation of the lining membrane of the larynx. However, previous to explaining my opinion as to the nature and treatment of croup, it may not be out of place to take a retrospect of those cases reported by Dr. Zimmerman, illustrative of the effects of sulphate of copper. In the first case reported the patient was 3 years of age; on the first day the symptoms became severe, twelve leeches were applied! and small doses of sulphate of copper given every two hours. On the second day, twelve more leeches were applied in the morning: the danger still continuing to increase, notwithstanding the increased doses of the sulphate, and large abstraction of blood, it became necessary to repeat the application of twelve leeches, and the doses of the sulphate, on the same evening. On the third day after the attack the child died.

The second case reported is that of a child, 6 years of age. It was attacked on one day, took doses of sulphate of copper, which acted as so many emetics; on the following day there remained no appearance of croup. There are three other cases reported, viz. 5, 8, and 12, in which the abstraction of blood was not resorted to, and from their history it may be inferred that in all the attack was very mild, and, I am inclined to surmise, of a spasmodic, and not of an inflammatory, nature.

In all the remaining nine cases, blood was abstracted, and to a considerable amount, if we take into consideration the tender age of the sufferers. It will be observed in the first and ninth cases the disease terminated the lives of

the patients. The success attending the treatment of the remaining cases, related by Dr. Zimmerman, I think may be fairly ascribed to the active depletion and vomiting produced by the sulphate of copper, and the consequent reduced state of the circulation; but from no specific effect of the sulphate.

I have no hesitation in affirming that there are two distinct kinds of croup; *i. e.*, an acute inflammation of the mucous or lining membrane of the larynx; and a spasmodic affection of the muscles of the larynx; in several respects these morbid affections assimilate each other. The former I will term true, and the latter spurious, croup. We shall find, in all cases of true croup, high inflammatory fever, attended with a full strong pulse, a difficult and sonorous inspiration, a short and difficult respiration, which becomes increased in paroxysms, with a crowing cough. These symptoms are always preceded by cold, or some other exciting cause. If at this stage of the disease the fauces and throat be examined, they will be found of a bright red or inflammatory appearance; and if the disease does not very early after the attack come under treatment, and that of a most rigorous character, there will be but little chance of the patient's recovery; for the mucous membrane has a tendency to secrete lymph of a very tenacious quality, which encroaches very rapidly on the air-passage, and will produce speedy suffocation. The inflamed vessels of the mucous membrane lining the larynx, in the early period of life, pour out this adventitious membrane, which generally commences about the larynx, and extends to the bifurcation of the bronchi: this I have had several opportunities of observing in cases which have proved fatal. From this brief account of the progress of the disease, it will appear evident, that the first object of the practitioner should be to arrest the progress of inflammatory action; for this purpose it becomes necessary to take large quantities of blood, and that in the briefest space of time, so as to produce a decided impression on the system; and although, generally speaking, children bear large losses of blood badly, yet, in this disease, there is a general exception to this rule. The best mode of abstracting blood is to apply a dozen or more leeches, as the case may require, to the upper part of the sternum, so as to pro-

duce a state of syncope as soon as possible, and then to check any excess of bleeding by the application of the nitrate of silver. This should be followed by an emetic. I do not think it matters much whether it be composed of ipecacuanha, antimony, sulphate of copper, or zinc, so long as full vomiting is produced. After the cessation of sickness, a full dose of calomel should be administered, so as to produce active purgation, which should be assisted by castor oil, repeated at intervals; for in every case that has fallen under my observation I have found the secretions much vitiated, especially the alvine. The general routine of treatment then is, to repeat at short intervals small doses of calomel combined with antimony, so as to keep the patient in a state of nausea, but not amounting to actual vomiting. At the same time a saline mixture, with the *Tr. digitalis* and *conii*, may be administered with very great advantage. I have treated in this manner a great number of cases, and believe with more than ordinary success, not losing more than one in ten. I account for this by the active depletion employed at the onset of the disease, for I do not believe without it there is any remedy capable of controlling this fearful disease. In cases of acute croup blisters are inadmissible, or if not, they should be applied at some remote part of the disease; and even the warm bath does more harm than good unless properly employed, which it scarcely ever is when left to the nurse. When used the child should be placed in the water at about 108°, which should be gradually increased till the skin becomes relaxed and relieved by a profuse perspiration; any thing short of this is worse than useless.

Spurious croup is a disease more formidable in appearance than dangerous; it will generally be found to arise from a disordered state of the stomach, dentition, costiveness, or accumulation in the bowels. One of my own children has suffered from repeated attacks of this form of croup during dentition. The treatment which I have adopted consists of emetics and purges of calomel and rhubarb, with free and repeated scarifications of the gums. This disease differs from the other by the absence of inflammatory action, and in consisting of a spasmodic affection of the muscles of the larynx.

Should you deem these hasty observations worthy a place in the *GAZETTE*,
 You will oblige
 Your obedient servant,
 WILLIAM ROBES.

South Terrace, Grantham,
 July 10, 1840.

ON THE DEFICIENCY
 OF
 CLINICAL INSTRUCTION AT
 VIENNA.

[*For the London Medical Gazette.*]

IN my previous letters I have drawn a short sketch of the existing clinics of Vienna, and will now add a few remarks on the deficiencies of the clinical instruction there in a general way. Closely adjoined to the great civil and military hospitals, there is an extensive foundling house, where we find equally the infant, the child, and boy or girl. Although this presents a most advantageous opportunity for the establishment of an extensive clinic on the diseases of children, yet it remains of no avail to the profession; for no one enjoying the confidence of the government has ever thought of converting its means to so useful a purpose. It is even not a little difficult for the inquiring traveller to enter within its limits, from his being constrained to obtain previously a written permission, for that intention, from the Director of Hospitals. Call this heedless neglect of a good and convenient means for cultivating the study of the affections of infancy and childhood by whatsoever name you will, it still seems to me a proof of a state of great moral degradation of the medical faculty there, as well as a blameable want of enterprise and remarkable languor. No impartial individual can retain a doubt as to the great utility, if not actual need, of some sort of clinical instruction in the treatment of children's diseases, in order to fit the youthful physician to practise his art with success in all its branches. Besides those nicer hygienic cares so contributory to the cure, and the modifications of medical treatment more especially applicable in such cases, it is only necessary to mention the more prominent affections of childhood and infancy to convince the most reluctant. Surely after calling back to memory infantile asthma, croup, the tubercle of infants, lobular inflammation of the lungs, dropsy

of the brain, inflammation within the cranium, diarrhoea, convulsions, aphtha, rickets, distortions, malformations, skin affections, eye disorders, &c. all modified in infantile life, no one will venture to affirm that the young practitioner can gain a satisfactory knowledge of such disorders, without the convenience of an extensive clinic; before fatal experience has often proved him to have fallen into error, and his ingenuity only to have served as a weapon for death.

The need of such a clinic is doubly desirable in Austria, where the system of education that the medical man must pursue is such as to prevent his familiarizing himself with those morbid ills, previous to the commencement of the public and responsible practice of his profession. The absence of such a clinic amongst ourselves in England is a circumstance of less importance; though, doubtless, still a great loss to the profession, and an injury of no ordinary magnitude to the social weal. This difference rests on the manner of our medical breeding; since we have a fair chance to witness a moderate extent of practice in this branch of our art at the period of pupillage, both prior to and during the College attendance.

There is a succession of wards in the great civil hospital appropriated for the reception of syphilitic patients, whose number far exceeds even the demands of an ordinary clinical institution; yet such a thing as a clinic on venereal complaints is never dreamed of by the authorities. But this is not all; the evil does not stop there; for it is required to get the good will of the attending physician, and a permission from the director of the hospital, before any student can enter; whilst this favour extends merely to the space of two days. When the physician overlooks a longer attendance, he exceeds the spirit of the hospital regulations, which amounts to a general prohibition. It would be difficult to ascribe the actual reason for a rule bringing such great loss to the successful study of medical practice in a land where the absolute governor does not submit to expose the wisdom of injunctions to public canvass, nor test them by the common sense of the mass of his kind. I incline to the belief, however, that it owes its origin to some false notion in morals. Some poetical moralist has imagined that the sight of the ills born by the victims of unlawful pleasures is

hurtful to the youthful mind. This may be true, inasmuch as it will be sensible to disgust; but that such objects can seduce the youth from virtuous manners, seems to me at once improbable, whilst it is belied by the evidence of fact.

Also in the civil hospital we find a particular department for patients afflicted with the filthy maladies of the skin: but, in this instance, again I must breathe the regret that no advantage is taken of it for the use of a clinic. Thus the physician of Vienna knows as little of the pathology and cure of these complaints—interesting because ordinary—as the Laplander does of the Italian Pellagra. It is, however, true, that some few cases of acute diseases, localised on the surface, are admitted into the medical clinic; but a few cases of small-pox, measles, and scarlet fever, are too inconsiderable, in comparison with the number and general importance of the affection which rank in this branch of pathology. Perhaps an argument of some weight in favour of the special study of skin diseases is the frequent defect of a practical acquaintance with them on the part of the educated practitioner, whilst the rambling quack often supplies his place as restorer of the suffering sick. Not only is the special study of local affections and peculiar diseases, apart from common lot, an advantage to the scholar, but it also offers additional opportunity for a perfect education to the clinical teacher. A clinical education ought to regard completeness, as far as practicable, in every branch; and in this part of their system the French excel us much.

Within the enclosure, not but a few paces distant from the vast hospital, stands, upon a slight elevation, the Narrenthurm, Irrenhaus, or mad-house. This is a considerable oval edifice, four stories in height, and used for the reception of individuals labouring under mental delusion, and also for cases of confirmed epilepsy.

Notwithstanding it is in every respect inferior to the asylums of England and France, it does still present all the convenience for a clinical school for the disorders of the mind, not on account of the number of admissions alone, these being forty two monthly, or thereabout, but likewise from the favourableness of its site. But alas! here again we find the door closed to the zealous student of

disease; he must ask and obtain previous permission for each particular visit; which is, in fact, nothing short of a prohibition of successive attendance. Besides, there being no shadow of a clinic on those most fearful afflictions that mankind are heirs to—perversion of reason, there is not even a strictly punctual visit on the part of medical attendants. It is difficult to conceive how any set of people can in this way shut their eyes with careless neglect to the immense advantages which the excellent arrangement of their hospital offers for the foundation of a practical school of medicine, that might be unequalled in the world. This Narrenthurm, considered as an asylum for the maniacal, is in every point of view unsuitable: it resembles a fortress prison, of a most gloomy aspect, being more fit to inspire strange thoughts, than quiet and dispel the fancies and hallucinations of the madman.

The department of morbid anatomy in the Civil Hospital of Vienna is by far the most extensive in Europe; and the practical knowledge of the cadaveric appearances of diseases taught by a few exceeds by far the experience of the medical men of any clime. The officers in the dead-house are three: Rockitsky, the Professor of Morbid Anatomy; Kolletschka, his assistant; and another young person of promise, who acts as scribe or secretary. The professor proceeds always with two courses at once, but at different hours; so also does his assistant; and thus there are constantly four courses on morbid anatomy going on during the whole year in Vienna. Morbid anatomy does not form any part in the curriculum of study, and is, therefore, a part of the private instruction. This is probably the reason that no student of the school visits the dead-house; he is not obliged to do so—he is not zealous—he is not encouraged—and he has already been wearied by a long and lingering course of education. The morbid anatomy school, with the rarest exceptions, is alone attended by foreigners, who come sometimes from the most distant parts to avail themselves of its most decided advantages. The great superiority of this School of Morbid Anatomy is, that every appearance, fact, assertion, or opinion, pointed out by the teachers, is supported or proved by numerous fresh specimens of morbid changes, whilst the scholar sees and

assists the act of autopsy. The judic ia and the ordinary post-mortem examinations are made in separate chambers adjoining one another. The grand defect of this arrangement is, that the clinic is kept wholly distinct from the department of morbid anatomy; and the clinical student does not avail himself of its aid. It is a most rare sight to see the professors of the medical or surgical clinics visit the dead-house; and when this does happen it is only in some curious case, when their scholars have seen them puzzled. On such occasions some few of the class attend likewise; but as this is like an angel's visit, they are not prepared to profit thereby. The foolish Hildenbrand laughs at the idea of representing morbid anatomy as valuable to the physician.

Believe me ever to remain,
Most truly your's,
* * *

Geneva, June 22, 1840.

[The name of course is given in the original, but we think it better to omit it.]

ANALYSES & NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

Practical Observations on Blindness from Cataract; with Cases, illustrating the advantages of an early Operation. By JOHN NORTHON THOMPSON, M.R.C.S.L., Honorary Surgeon to the Nottingham Dispensary.

WE have received a small pamphlet from Mr. J. N. Thompson, of Nottingham, entitled as above, which, as it bears the stamp of being the result of considerable experience in ophthalmic surgery, we deem to be worthy of notice. The observations are short, and confined to the consideration of one question: viz., the propriety of *early* operation in cases of cataract. Mr. T. is of opinion that this operation is in the majority of cases delayed unnecessarily long, and he brings forward numerous examples to prove, not only that the lens might be broken up at a much earlier period than is usually recommended, but that when the operation is performed before the cataract has had time to *ripen*, as it is popularly termed, the result is not only more favourable, but more certain. In short, if we understand Mr. Thompson correctly,

as no remedial measures, short of the couching needle, can avail in the treatment of cataract, he advises that this should be had recourse to as soon as the opacity of the lens has fairly declared itself; and that then the best and only operation necessary is that recommended by the late Mr. Saunders, viz., the destruction of continuity in the lenticular structure, so that it may be removed by solution and absorption. This question has not, that we are aware of, been considered before, and to Mr. Thompson is due the credit of priority. The essay, therefore, has its merit, and is deserving the consideration of those who are especially interested in the improvement of ophthalmic surgery.

Observations on the Management of the Poor in Scotland. By WILLIAM PULTENEY ALISON, M.D. F.R.S.E. Second Edition.

IN our editorial articles of Feb. 7th, 14th, and 28th, we introduced the first edition of this remarkable work to our readers. The second edition contains some valuable additions, and should be in the hands of every lover of justice and humanity. Among the monstrous assumptions of the Malthusians, there is one of pre-eminent absurdity, which supposes that if workhouses are made tolerably comfortable, there will be a run upon them; every body it seems would rather eat meat four times a week in prison, than once a week in his own cottage. It is true that this same flocking to the workhouse never occurred yet in any age or country; but, what of that? The assumption makes a good argument for water and gruel, nevertheless. The more reasonable portion of the Poor-Law people are obliged to give up theory, but the prohibition of Christmas beef and pudding still continues in practice.

The present edition, which is printed in a more compressed form than the former one, is sold for the extraordinarily small price of two shillings. Those who have read our former articles on the subject will be ready to acknowledge that Dr. Alison's book is not a mere commentary on the Scottish treatment of the poor, but that it should be studied by every friend to the human race in whatever corner of the empire he may dwell.

Practical Remarks on the use of Iodine, locally applied, &c. By J. DAVIES, Surgeon to the General Infirmary at Hertford.

AFTER some remarks on local therapeutics, and on the therapeutic properties of iodine, Mr. Davies gives an account of the benefit derived from its external application in erysipelas; phlegmon; extensive sloughing of the cellular membrane; acute inflammation of the joints; inflammation of the breast; gout; chronic enlargement of the joints; inflammation of the absorbents; carbuncle; lupus, or *noli me tangere*; malignant ulcers of the tongue and tonsils; serofulous swelling of the glands; whilow; chilblains; lacerated, contused, and punctured wounds; burns and scalds; and ulcers.

Mr. Davies uses iodine externally in two different forms; namely, a tincture made with forty grains of iodine and an ounce of rectified spirit; and a solution of thirty-two grains of the hydriodate of potass in an ounce of distilled water, with the addition of eight grains of iodine. The tincture is diluted with spirit, when necessary; and with the "ioduretted solution a lotion is made by the addition of distilled or common water, varying in strength according to circumstances, from one-eighth to one-fourth of the former." That is to say, the lotion may be one-eighth or one-fourth of the strength of the solution. These preparations of iodine are not the same as those of the London Pharmacopœia. The following extract shows the method of using the tincture:—

"Suppose we are called to a case of severe inflammation of the leg, in a stout, robust person: the limb is intensely red, hot, swollen, and glossy, all the way from the toes to above the knee: it is double the size of the corresponding one, and so painful as to disturb the general health, as to cause quickness of the pulse, white tongue, thirst, &c. We immediately *paint* the whole limb with the tincture of its full strength, extending its application from the toes to several inches above the upper margin of the inflammation: the remedy is applied with a camel's hair brush. This is all the local application requisite for the present. The limb is directed to be kept in a horizontal posture, and either to be very lightly covered over with a sheet—which must not come in contact with the skin—or else to be

left exposed, according to the temperature of the apartment. In less than twenty-four hours—in less than twelve hours—the swelling will be found to have diminished. At the end of twenty-four hours the skin will be seen much corrugated, shewing its contents to have become less in bulk, and the circumference of the limb will measure some inches less than the day before. The diminution will be found to have taken place more particularly towards the upper part of the swelling. We now repeat the application of the tincture, of the same strength. In another twenty-four hours the reduction of the swelling will have gone on rapidly, and only a remnant of the disease will be found to exist. The strength of the tincture must be now reduced to one-half, and its application continued daily, or less often, according to circumstances, until the limb is well. After the second or third applications of the tincture, we sometimes brush the limb over with spirit of wine alone, so as merely to dissolve the iodine which remains on the surface of the skin."—Pp. 17, 18.

If the tincture is applied too frequently or too strong, "it may cause the skin to inflame or the cuticle to blister, but that is the only inconvenience which has ever occurred from its use."—P. 62.

"If any itching, or a slight blush of the skin, should follow the repeated applications of the remedy, especially on the lower extremities, it should be discontinued, otherwise the cuticle will rise into small watery pimples, and will tease the patient for a few days; but this effect is produced by it on the *healthy* skin only—when applied, for instance, to the skin covering a diseased joint, or when any induration or swelling is situated under the skin—for we have never found it to blister the cuticle and to cause exudation of lymph from the surface of an *inflamed* skin."—Pp. 18, 19.

Mr. Davies supposes the iodine to act by contracting the enlarged capillaries of the inflamed part.

In the last page of his essay he gives another list of diseases in which the tincture has proved beneficial; and we must add that he has had eleven years experience of the remedy; so that if our author has not been led astray by the zeal incident to a discoverer, he has made a most estimable addition to the surgical pharmacopœia.—*Nous verrons.*

MEDICAL GAZETTE.

Friday, July 17, 1840.

“Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
 publicum sit, dicendi periculum non recuso.”

CICERO.

QUESTION OF INSANITY.

THE TRIAL OF EDWARD OXFORD.

THIS trial has not passed without exhibiting many features of interest in a medico-legal point of view, and in reference to that most difficult of all the questions which our profession are, or at least used to be, called on to decide in public—the suspected insanity of one accused of crime. Although we fully concur in the justice of the verdict, we are at the same time bound to add our belief that no prisoner was ever before found insane on so little evidence, and that in almost any other case than that of an attempt to murder the sovereign, the plea of insanity would have totally failed. Let us suppose, for example, what might very well have happened, that Oxford had attempted the assassination of an equal, after only the slightest possible degree of provocation, or for some imagined injury that he conceived he had sustained, or for some good to which he had a vague notion that the object of his attack was an obstacle in his way. Of what avail would the evidence of the strange and foolish proceedings of his father and grandfather have been? or of what use would it have been to prove that he had himself laughed and cried out of season, and written bad poetry, and done many other silly things, in common with others of weak intellectual powers? Such evidence would have been deemed valueless, and he would probably have paid the penalty of his life. None can doubt this; therefore this case has shewn that, though the evidence of previous insanity be extremely slight, and afford

only the smallest degree of probability of its existence, yet the circumstances of the single crime committed may be such as will establish to the satisfaction of a jury and of the public, that the individual convicted of it was not, at the time of its commission, responsible for his acts. This has been long acknowledged in France and Germany in cases of moral insanity, but had not hitherto, we believe, been fully admitted in our own courts. Of the justice of admitting such a conclusion there cannot be a doubt; the prudence of acknowledging it is much less certain, since the history of all similar cases has shewn, that the expectation of punishment is the surest means of preventing the morbid anxiety for destruction from being carried into effect.

The case of Edward Oxford, however, does not appear to be one of those that can be regarded as examples of moral insanity, or of the “*lesion de la volonté*”; or, at least, if he did labour under a morbid propensity for the destruction of life, it must have been coincidently with a general deficiency of intellect; and as far as his history is given by the witnesses, it had never before made its appearance under that form. The evidence of Drs. Conolly and Chowne, who visited him in prison, and of Mr. Clarke, who had seen him often in his boyhood, was unanimously in favour of his being imbecile; and all the circumstances of his case tend strongly to corroborate the same conclusion. This case, therefore, has sanctioned the establishment of another important consideration, namely, that the absence of a distinct motive in the commission of a crime may be deemed to afford as strong evidence of insanity and irresponsibility as the existence of some delusion under which the perpetrator acted. Here, again, justice and prudence are in some measure opposed: one cannot doubt the truth of the conclusion that none but the

insane commit atrocious crimes without purpose, yet, at the same time, one cannot but feel sure that unless the whole of the *onus probandi* is thrown strictly and heavily upon those who set up the absence of purpose in their defence, such an admission must afford a very dangerous hope of committing crime with impunity.

Such are the two most important points admitted by the verdict in this case; that in cases in which insanity is set up as a defence by criminals, the circumstances of the act itself for which they are accused, and the absence or great insufficiency of motive, may constitute sufficient evidence of the unsoundness of mind, although the previous history of the accused may have afforded only the weakest presumption of it. Such an admission in a verdict, which, if the Chief Justice predicted rightly, "will be an example, which, like former verdicts in the present day, will be quoted in courts of justice as defining the rule,"—"by which the lives of all our countrymen in future times are to be protected," is indeed a circumstance of the very highest interest. But we can scarcely expect that "so dangerous a maxim as that the mere enormity of a crime should secure the prisoner's acquittal by being taken to establish his insanity," will ever again be acted on in a case devoid of the many peculiarities by which this has been marked. No one can doubt that the very enormity of a crime committed without adequate motive must often be one of the strongest, or perhaps the only indication of the insanity of him who has perpetrated it; in the present case, it is quite certain that the plea of insanity would have been valueless as an excuse for a crime of less atrocity, and that the less the crime the less would such a defence have been listened to; but here, as in many other cases, the public safety demands and authorizes the infliction of

some violence upon the strict sense of justice, and the law must have its course against the suggestions of abstract equity. On this ground only should we hold the punishment as a criminal of Oxford, or any other person similarly situated, to be justifiable; if the *salus populi* demanded it, his apparent or partial irresponsibility must be overlooked, and he must fall under the strong arm of that *suprema lex*; but on no other consideration must it be forgotten that the very enormity of an act is often strong evidence of its insanity, and may be sufficient to prove its existence with no stronger evidence of hereditary disposition or of previous extravagance of conduct than was adduced in this case.

Other features in this case, less generally important, yet hardly less interesting to our profession, were the opinions expressed by the eminent lawyers engaged in it respecting the nature of insanity, and the capability of medical men to offer acceptable information upon it. We have often before remarked that the cunning question respecting the definition of insanity, which counsel usually ask for the purpose of confusing or throwing discredit on a medical witness, is a mere foil to direct attention from the consideration of what constitutes insanity in law. In strict pathology there would be no more difficulty in defining insanity, than in defining any other disease, as a disturbance of the functions of any organ from the natural mode of their performance; and it is only because lawyers have required a definition which should not appear incompatible with their own notions of insanity, which are founded on no fixed principles of either law or medicine, and which vary with every case that occurs, that any difficulty has presented itself. If, for example, every man who suffered under an uncertain kind and degree of disorder of the bowels, was liable to be made the subject of legal investigation,

who can doubt but that it would be as difficult to give a definition of disordered bowels, which should please either or both parties of the counsel engaged, as it now is to satisfy them with a definition of insanity.

The fact is, that the legal idea of insanity extends no further than the question whether a man is fit for the performance of some one act, which differs according to the nature of the case in which its consideration comes into a court, or whether he is to be deemed responsible for any crime that he may have committed. Oxford, for example, might, had he been old and rich enough, have made a will that would be perfectly valid in the eye of the law; and none of his relations could, on the score of insanity, have deprived him of the management of his own affairs—yet he is irresponsible for an attempt to murder his Sovereign. Nay, in law, the case is carried further. A man is so mad that he is constantly possessed with the idea of being in love with a princess, to whom he writes with cherry-juice; but, says the Solicitor-General, “if that man had committed a murder would his delusion have borne on the case, so as to alter the moral nature of the deed? Why should it have done so? Could the jury suppose if he had shot any person, an act which would have had no earthly connexion with his delusion about the princess and cherry-juice, that the existence of insanity on a subject so wholly unconnected would have rendered him irresponsible? By no means.” Let us suppose, then, that the subject of this delusion *had* committed murder, or, like Oxford, had attempted the assassination of the Queen. No medical witness could have had the least hesitation in declaring him insane, nor could any medical definition of insanity be made so narrow that it would not include him. Yet in the eyes of the law he is not mad, in respect of the particular

circumstances under which he comes into court. The medical evidence is, therefore, deemed valueless, and the decision of the case must rest on the common laws of general evidence, from which it must be deduced whether he laboured under any special delusion, whether he had any motives for his act, what those motives were, and a number of other circumstances which medical men are scarcely more calculated to judge of than any others of equal intelligence.

This, indeed, is the important consideration which it has been the tendency of all recent trials, in which the question of insanity has been mooted, to establish, viz. that the evidence of medical witnesses is neither essential nor even of peculiar value. The Chief Justice said—“Every sort of insanity, and every mode of proving it, must have reference to the particular object with which it was laid before the court,”—that is to say, there can be in law no definition of insanity—what is madness in one case may in law be sanity in another or in all others—and in each instance the proof must be established according to the common laws of evidence, by reference to the peculiar circumstances of the case; and though “the evidence of the medical gentlemen was to be listened to with all the attention their knowledge demanded, yet the common sense of the jury must be the arbiter of what they saw.” What follows, therefore, will not be unexpected nor seem strange. “There might be cases of insanity in which medical evidence as to physical symptoms was of the utmost consequence; but as to moral insanity, he (the Chief Justice) for his own part, could not admit that medical men had at all more means of forming an opinion on a case than were possessed by gentlemen accustomed to the affairs of life, and bringing to the subject a wide experience.” It was to be gathered from their observation in the course of the trial, that the other judges enter-

tained the same opinion as is here expressed; and although there may be some doubt as to the number and nature of the *physical symptoms* of insanity, of which alone medical witnesses are in future to be deemed the best judges, yet it is certain that the time is now not far distant when they will almost cease to be asked their opinions in courts of law upon questions of insanity, and especially upon those in which the persons supposed insane are charged with crimes.

This, indeed, must of necessity be the result of the admission, that "every mode of proving insanity must have reference to the particular object with which it is laid before the court; for in that case, the general proof of insanity, to which the medical witness must speak, will be of little value, unless there be also a proof of insanity in reference to some single object; and of a proof of the latter kind, it is quite clear that any two persons of equal intelligence and general experience in society are equally competent to judge, whatever be their professions. The opinion of a physician who has especially devoted himself to the management of the insane, would, of course, be still deemed peculiarly valuable; but, with such an admission as that above mentioned, the opinions of the rest of the whole body of the profession on questions of insanity must henceforth cease to be regarded as of any particular importance in a court of law. In short, in criminal, and to a less extent in civil cases, insanity must henceforward be regarded as a legal—not as a medical question.

We are not sure that this need be a matter of regret to the profession, while the law of insanity was so unstable, and admitted of the application of no general principles; it was and ever has been impossible for a medical witness to obtain any solid credit by his evidence in court; and now that he is to be reduced to the rank of other ordinary

witnesses, and to have his evidence set aside by the decision of the very variable and usually very inferior common sense of the jury, it will, probably, be more to his honour to be forgotten, than to be called to offer his opinion on cases of this class.

TESTIMONIAL TO SIR BENJAMIN BRODIE.

HAVING heard a report that the Committee for the Brodie Testimonial had proposed to found with the money subscribed a prize for the school at St. George's Hospital, we have made particular inquiries on the subject, and are enabled to state that such is not the case; the committee being only anxious that the testimonial to be offered to Sir Benjamin Brodie should be such as would shew to posterity the high sense entertained by his professional friends and pupils of the many improvements introduced by him into the science of surgery; and we earnestly trust that a sufficient sum will be raised to enable the Committee to propose to the general meeting such a testimonial as shall be worthy of him, and the profession to which he belongs.

DEATH OF GRAEFE.

WE regret to announce the decease of this distinguished surgeon, which took place on the fourth of the present month, at Hanover, whither he had repaired for the purpose of operating on Prince George of Cumberland, for cataract. His remains have been conveyed back to Berlin.

VACCINATION EXTENSION BILL.

THIS bill, as amended by the Commons, passed the Lords on last Monday, the 13th, Mr. Wakley's Small-pox Prevention Bill, of course, falling to the ground. This result confirms the apprehensions we expressed in formerly alluding to the subject; as the latter, in our opinion, would have been the better act of the two.

The document itself will be found at p. 771 of our present Number.

UNIVERSITY OF LONDON.

EXAMINATION FOR HONOURS.

Tuesday, July 14.—Morning, 10 to 1.

ANATOMY AND PHYSIOLOGY.

Examiners, Mr. KIERNAN & Dr. SHARPEY.

Candidates may illustrate their answers by sketching the parts they describe.

1. Describe the parts successively brought into view in dissecting, from the skin of the perineum to the inferior fundus of the bladder, that space which is bounded anteriorly by the arch of the pubes, posteriorly by the rectum, and on each side by the ramus of the ischium and obturator internus muscle.

2. Describe the internal structure of the kidney; and state what you conceive to be the relation of the blood-vessels to the ducts, adducing the evidence.

3. Describe the intimate structure and chemical composition of interarticular cartilage, and in what respects it differs from articular cartilage.

Afternoon, 3 to 6.

1. Give the dissection required to expose the course of the vertebral artery, from the third cervical vertebra to the foramen magnum; commencing at the integuments on the back of the neck, and describing the several parts successively met with in the dissection.

2. Describe the mucous membrane of the stomach and small intestine; the description to include that of the ultimate arrangement of the blood vessels, the epithelium, the follicles of Lieberkühn, and the glands of Brunner and Peyer. What recent investigations have been made into the structure of the last-named bodies? Describe also the development of the alimentary canal, with the exception of the mouth and fauces.

3. Describe the erectile tissue, and state what recent researches have been made into its structure. In what other parts of the body, besides the corpora cavernosa and corpus spongiosum, has it been said to exist, and what is your own opinion upon this point?

Wednesday, July 15.—Morning 10 to 1.

CHEMISTRY.

Examiner, Mr. DANIELL.

1. How may carbonic acid be generated and condensed into the liquid state? Explain the phenomena which occur when liquid carbonic acid is allowed to evaporate rapidly.

2. Explain and illustrate the meaning of the term DIATHERMANCY; in what do

diathermanous bodies differ from diaphanous and transparent bodies?

3. What are the principal phenomena of polarized light; and how may light be polarized?

4. How may the diffusion of Gases be measured? and what is the law of their diffusion.

5. Describe the construction and explain the action of the electrical condenser.

6. Describe the mode by which a volta-type copy of a medal may be obtained, and explain the process.

7. What is Methylene? How is hydriodate of Methylene obtained, and what is its relation to Alcohol?

8. What is the constitution of Phosphoric acid? What are its relations to water and salifiable bases.

9. What are the principal constituents and characters of the fusible calculus, the mulberry calculus, and of red gravel?

10. Describe the properties of Sulphur and Selenium; state their equivalent numbers, and the points of resemblance between these two elements and their compounds.

Afternoon, 3 to 6.

MATERIA MEDICA AND PHARMACEUTICAL CHEMISTRY.

Examiner, Mr. PEREIRA.

1. What are the crystals contained in the bottles marked respectively A, B, C, D, E, and F? Are they hygroscopic or anhydrous? what are their primary forms? what is their atomic constitution?

2. The fruits contained in the bottles marked respectively G, H, I, and K, were found in Alexandrian senna. State the botanical name, natural order, and Linnaean class and order of the plants from which they were respectively derived.

3. How is the presence of nitrate of potash in fused nitrate of silver to be determined? Bisulphuret of mercury is sometimes adulterated with red lead,—by what means would you detect the fraud? How would you ascertain the presence of carbonate of soda in the bicarbonate of soda of commerce.

4. Describe the method of making *Ammonia sesquicarbonas* Ph. L. Explain, according to the ammonium hypothesis of Berzelius, the chemical changes which occur in the process.

5. State the most important chemical distinctions between *Morphia*, *Narcotina*, and *Codeia*; also between *Strychnia* and *Brucia*; and between *Cinchonia* and *Quina*.

6. How is oil of vitriol made? Explain the theory of the process.

7. Why is the *Liquor Ammoniae Acetatis*, as usually found in the shops, incompatible with acetate of lead?

8. In what part of bark does their me-

dicinal activity exclusively or principally reside; and how do you explain the fact of its residing in one part chiefly?

9. What are the most important constituents of the mineral Waters of Cheltenham and Harrowgate; and for what diseases are these waters respectively adapted?

10. State the peculiar or characteristic symptoms produced by Opium, *Hyoscyamus*, *Belladonna*, Tobacco, *Digitalis*, Aconite, *Conia*, and *Strychnia*.

11. Under what circumstances are Chalybeates to be preferred, as tonics, to the vegetable bitters?

12. Describe the effects, uses, and modes of administration of Iodine.

VACCINATION EXTENSION BILL.

Act to extend the Practice of Vaccination.

“WHEREAS it is expedient to extend the Practice of Vaccination; be it therefore enacted, by the Queen’s most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons in this present Parliament assembled, and by the Authority of the same, That from and after the passing of this Act, it shall be lawful for the Guardians of every Parish or Union, and for the Overseers of every Parish in which relief to the Poor shall not be administered by Guardians, in England and Wales, and they are hereby directed, to contract with the Medical Officers of their several Unions or Parishes respectively, or with any legally qualified Medical Practitioner or Practitioners, for the Vaccination of all persons resident in such Unions or Parishes respectively: Provided always, That it shall be a condition of every such contract, that the amount of the remuneration to be received under the same shall depend on the number of persons, who not having been previously successfully vaccinated, shall be successfully vaccinated by such Medical Officers or Practitioners respectively so contracting.

“And be it further enacted, That in making such arrangements as may be required for the execution of this Act, such Guardians and Overseers, and all other Officers engaged in the administration of the Laws for the relief of the Poor, shall conform to the regulations which may from time to time be issued by the Poor-Law Commissioners in that behalf, which regulations the said Commissioners are hereby authorized and required to make and issue.

“And be it further enacted, That such Medical Officers or Practitioners shall make a Report to such Guardians, or

Overseers from time, to time of the number of persons successfully vaccinated by them respectively, and shall make such further Report with respect to the persons so vaccinated, as such Guardians and Overseers under the direction of the Poor-Law Commissioners shall require.

“And be it enacted, That such Guardians or Overseers, shall forthwith, after the conclusion of any such Contract as before mentioned, transmit a Copy thereof to the Poor Law Commissioners.

“And be it enacted, That if such Commissioners shall not annul such Contract within Fourteen Days from the receipt thereof, such Contract shall thenceforth not be liable to be annulled by such Commissioners.

“And be it further enacted, That as soon as may be after the passing of this Act, the Guardians of every Poor-Law Union in Ireland shall (subject to the approbation of the Poor-Law Commissioners), divide such Union into Districts of convenient extent, and may alter the same from time to time, (subject to the like approbation as aforesaid) contract with competent Medical Practitioners for the period of One Year, and so from year to year as such Contract may expire, for the Vaccination of all persons who may come to such Medical Persons for that purpose.

“And be it further enacted, That all the provisions hereinbefore made with respect to England and Wales for the appointment and giving due notice of the appointment of the places and times at which such Medical Officers or Medical Practitioners shall attend to vaccinate such persons, and for the making of reports by such Medical Officers or Medical Practitioners, shall apply to all such Contracts as may be made under this Act by the Guardians of any Poor-Law Union in Ireland; and such Guardians, and all other Officers engaged in the administration of Relief to the destitute Poor, shall conform to the regulations and instructions of the Poor-Law Commissioners, in like manner as hereinbefore directed with respect to Guardians, Overseers, and other Officers in England and Wales.

“And be it further enacted, That any person who shall from and after the passing of this Act produce or attempt to produce in any person, by inoculation with variolous matter, or by wilful exposure to variolous matter, or to any matter, article, or thing impregnated with variolous matter, or wilfully, by any means whatsoever, produce the disease of Small-Pox in any person in England, Wales, or Ireland, shall be guilty of a misdemeanor, and shall be liable to be proceeded against and convicted summarily before any Two or more Justices of the Peace in Petty Ses-

sions assembled; and for every such offence shall upon conviction be imprisoned in the common gaol or house of correction for any term not exceeding three months.

"And be it further enacted, That every word in such part of this Act as refers to England and Wales shall be interpreted in like manner as such word is directed to be interpreted in an Act passed in the fourth and fifth year of his late Majesty King William the Fourth, intituled "An Act for the Amendment and better Administration of the Laws relating to the Poor in England and Wales;" and that every word used in such part of this Act as relates to Ireland shall be interpreted in like manner as such word is directed to be interpreted in an Act passed in the first and second year of the reign of Her present Majesty, intituled "An Act for the more effectual Relief of the destitute Poor in Ireland."

TUBERCULAR PHTHISIS.

DR. GRAVES exhibited the lungs of a woman who had died a few days previously at Sir Patrick Dun's Hospital. She was admitted with symptoms of phthisis, accompanied by chronic laryngitis. Dr. Graves remarked, that it was well known, that where laryngeal disease with stridulous breathing exists, many of the phenomena of phthisis are recognized with difficulty. The character of the inspiration, of the voice, and of the cough, are not the same as when laryngitis is absent, and the sounds of the larynx mark those of the lung. The chief point to which he wished to refer in the case alluded to was this: both lungs were filled with tubercles, and in both there were tubercular cavities, a large one in the left, a much smaller one in the right lung. The right lung was every where closely adherent, in the left there were no adhesions; any one who examined the lungs would have expected, that during life they would have given evident indications of the nature of the disease, and that there would have been distinct dulness on percussion. Dr. Graves had percussed the chest, and it every where returned a clear sound, no dulness could be discovered in any part. He remarked, that in the investigation of diseases of the chest he had been frequently struck with the fact, that although percussion gives in some cases signs of great value, and which, when positive, appear to be infallible, in other cases the information derived from it is questionable. The truth of this he had frequently verified in cases of phthisis, in which tubercle might exist to a considerable amount, and without dulness.—*Dublin Journal of Medical Science.*

MR. OWEN'S REJOINDER.

WE have received a very lengthy paper from Mr. Owen, on the subject of the controversy regarding the originality of the views promulgated in his recent work. We have directed that it and any other paper referring to the same subject, from any of the gentlemen who have taken part in the discussion, be inserted in the *extra-limite* department, in order that the space devoted to the regular business of the journal may not be encroached upon.

RECEIVED FOR REVIEW.

A Treatise on the Structure, Functions, and Diseases of the Foot and Leg of the Horse. By W. C. Spooner, M.R.C.V. &c. Transactions of the Provincial Medical and Surgical Association, Vol. VIII.

Dr. Tweedie's Library of Practical Medicine.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, July 2.

John Medmer Goodwin, London.—Abraham Wolfe, London.—William Holme, Kendal, Westmorland.—Oswald Allen Moore, York.—Henry Boxall, London.—James Nance, Ashford, Kent.—William Rhys Williams, Rochester, Kent.—Arthur James Skrimshire, Northampton.

Thursday, July 9.

Augustin Prichard, Bristol.—Edgar Cockell, Down Kent.—William Allard, Tewkesbury.—Edward Smith, Birmingham.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N. Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

July.	Thermometer.	Barometer.
Wednesday 8	from 51 to 65	29.72 to 29.68
Thursday . 9	43 67	29.73 29.91
Friday . . 10	43 65	29.91 29.87
Saturday . 11	51 65	29.88 29.89
Sunday . . 12	46 67	29.90 29.89
Monday . . 13	43 67	29.89 30.05
Tuesday . 14	38 71	30.16 30.18

Wind S.W. on the 8th; N.W. on the 9th; S.W. on the 10th; W. on the 11th and following day; N. on the 13th; S.W. and W. on the 14th.

On the 8th morning clear, otherwise cloudy, with rain; the 9th generally clear, rain at times; the 10th generally clear, rain in the morning and evening; the 11th morning clear, afternoon and evening overcast; the 12th evening overcast, otherwise clear; the 13th afternoon cloudy, rain at times, otherwise clear; the 14th generally clear, except the evening.

Rain fallen, $\frac{1}{125}$ of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

MR. OWEN'S REJOINDER TO
MR. NASMYTH.

To the Editor of the Medical Gazette.

SIR,

IN the case of a scientific discovery or theory, enunciated in simple and intelligible terms, nothing seems easier to prove than a priority. To ascertain the dates of publication of the respective works—to determine the degree of correspondence in the definitions or descriptions in question—are the simple processes by which the case is settled.

Whether, besides the undoubted merit to be awarded to the earlier author, the stain of plagiarism is to be affixed to the later writer, must be a more complex and difficult question for the upright and just mind to determine upon. It must depend on the degree of correspondence in the terms in which the discovery is narrated; on the intellectual character and pursuits of the later author, with reference to the probability or otherwise of his originating independently the same idea or theory. Lastly, on his known moral character and habits.

With respect to the theory of the "formation of dentine or ivory by calcification of pre-existing and pre-arranged cells in the substance of the pulp," the right of the author of the memoir communicated to the French Academy, 16th December, 1839, was called in question in two distinct communications, which appeared in the *Gazette* and *Lancet* for June 5th and 6th, 1840; and the priority being assumed to be proved against that author, his relation as a plagiarist from the earlier one seemed in one of the journals to be taken for granted, and coarse abuse was lavished upon him.

It was urged in defence, that, of the works quoted as plagiarised from, the one offering the nearest approach to a correspondence with the new theory could not possibly have been in possession of the author accused, being posterior in date to his work; and it was proved that the passages quoted for the same purpose from the accessible or anterior works were incorrectly quoted, as well as the professed parallel passages in the work of the accused author.

But it was assumed by the accusers that the earlier and later works of the author whose interests they defended

were essentially the same, being exponents of the same views, and, in short, different forms of the same memoir. This assumption led to a demonstration of an important discrepancy in regard to the theory in question, and to the conjecture of the existence of many others, between the earlier and the later forms of the memoir alleged to be plagiarised from.

Moreover, the later memoir, quoted as containing the statement "*that the ivory was an organic deposition of ossific matter in the pre-existing cells of the pulp**," being in the condition of a privately circulated pamphlet, and no copy of it having been transmitted to the accused author, he was compelled to take the best means he could to obtain a sight of it, that he might compare its tenour and amount of resemblance with the earlier and only published forms of the (alleged) same memoir.

And now, having stated the case in question as it stood after my answer to the first charges against me, I may observe that my letter to the officer superintending the publication of the Transactions of the British Association, of which the privately circulated memoir professed to be a part, was a necessary step and consequence of the unfair manner in which I had been attacked—as it were, in the dark. I thought it fair to Mr. Nasmyth to print that letter, and at the same time, however strongly suspicion might point to his having had a hand in the simultaneous and anonymous attacks, yet the private and altered memoir might have come into the possession of a third person, without Mr. Nasmyth having any cognizance of or consent in the abuse, to which he must otherwise have known that the new paragraphs in that altered memoir were to be applied.

The least offensive suggestion as to the motive of such alterations was therefore, obviously, that the memoir about to appear should be *au courant*. And I was glad to read the explicit negation of any concernment in the attacks in question, with which Mr. Nasmyth commenced his letter in your number for June 26th, p. 545: although many of your readers, like myself, must have been at a loss to understand how Mr. Nasmyth's forbearance should have been particularly trespassed upon during the operation of

attacks in which all the praise was for him, and all the blame another's. Admitting, however, that the eighth volume of the Transactions of the British Association could form no element in determining the priority of the theory in question, the desired result might have been attained if either the reviewer for the *GAZETTE* or *Lancet*, or Mr. Nasmyth himself, could have adduced any single passage in the reports of his memoir in the *Athenæum* or *Literary Gazette* of Sept. 14 and 21, 1839, stating the ivory to be formed "by an organic deposition of ossific matter in the pre-existing cells of the pulp," or "by ossific transition or transformation of the pulp's substance." I say, that although such statements would only resemble, to a certain extent, my theory, and fall short of what it enunciates, yet I would yield the palm of priority to the author who, before me, had satisfactorily established and fairly expressed those statements.

This would be the plain and short way that a true anticipator would take: instead of which, your readers have been presented (June 26th) with a letter from Mr. Nasmyth, in which, leaving the refuted charges of his friends the reviewers to their fate, he ransacks the stores of private correspondence for the grounds of new accusations; and this letter is followed (July 3d) by a second review of my Odontography. Letters from a M.R.C.S., residing at a distance in the country, and from a Mr. Tomes, serve to divert your readers' attention from the question at issue, and are meant to damage me in their estimation; and lastly, a second very long letter, from Mr. Nasmyth himself, partly argumentative and exculpatory, partly accusative also, with private correspondence quoted, appears in the *Lancet* of July 11th.

These have determined me again to address you, to set myself right with your readers, whose good opinion I find requisite to cheer me on in my labours, and many of whom may have neither the leisure nor will to sift closely the charges laid against me, which then I feel would require no answer of mine.

And first they may wish to know something of my now avowed adversary and accuser's character for veracity.

Mr. Nasmyth affirms, in your journal of June 26, p. 545, as follows: "I had determined to continue to practise forbearance, and to take no part whatever in the discussion respecting Mr. Owen's plagiarisms from my writings." But

in the *Lancet* of last week it would seem that he had been compelled to admit, that it was himself who transmitted to that journal the private copy of the modified memoir still in the press, and which he knew I could have never seen, together with my memoir of Dec. 16, and these for the express purpose of a comparison between them, which was to establish the charge of plagiarism against me, and which accordingly did draw down upon me the abuse to which I have alluded.

"Had I been aware," says Mr. Nasmyth, addressing Mr. Wakley, "that such a cunning outcry would have been raised on what I shall proceed to show is altogether a groundless assumption, I certainly, for my own sake, should not have sent you that abstract for review. My motive for sending you a copy of it was very natural: I wished you to compare my own account of my researches with Mr. Owen's history of his '*Nouvelle Theorie*.'" — *Lancet*, July 11th, p. 567.

How does this admission square with the previous assertion? How would it tally therewith, supposing that Mr. Nasmyth had marked the particular passages to be compared, or had himself written any part of the attack in a reviewer's disguise?

But taking his own admission alone, what becomes of his veracity? You, Mr. Editor, who have not, as yet, revealed the share that Mr. Nasmyth took in the attack upon me, or 'discussion,' in your number for June 5, can best judge of this point.

But before Mr. Nasmyth's confession that he was the plotter of, and furnisher of the materials for, the *Lancet*'s attack, I had obtained, through Prof. Phillips, the following information, which threw some light on both 'discussions':—

A few weeks before their simultaneous appearance, Mr. Nasmyth obtained a certain number of private copies of his memoir, then, as now, standing in type, as prepared for the Transactions of the British Association, vol. viii., and he transmits a copy of this modified memoir to the editors of two public journals.

Now, inasmuch as the Council of the British Association, by whose authority alone any part of their forthcoming volume can be anticipated, are not as yet cognizant of the act, those private copies were equivocally obtained.

From the use made of these surreptitious copies, it is evident that Mr.

Nasmyth did obtain and transmit them to the editors of widely circulating medical journals, for the purpose of trumping up a charge of plagiarism against me, by the comparison of certain interpolated passages in his unpublished memoir, with similar passages in a memoir of mine published six months before.

And what say the editors, when the fraudulent representative of the unpublished volume is unmasked? You, sir, transfer the onus of the fraud upon your nameless reviewer. Mr Wakley admits that "had he entertained the most remote idea 'that the eighth volume of the Transactions of the Association' had not yet been published, it should never have been alluded to in the review of my memoir" (Lancet, June 27). But without the aid of the quotations from the suppositions volume, the purpose of the reviewer could not have been carried into effect. If the abstracts of Mr. Nasmyth's memoir, in the Literary Gazette and Athenæum of September last, afforded sufficient grounds for proving plagiarism in my memoir of the December following, why does Mr. Nasmyth wait six months, and then, as soon as he can, by hook or crook, get a private copy of his corrected memoir out of the printing press, commence his double attack in the Lancet and Gazette? Is this delay to be carried to the account of the virtuous forbearance he is in the habit of practising? Perhaps your reviewer, who can perceive really no essential difference between the uncorrected edition of Mr. N.'s memoir in the journals above cited, and the edition which Mr. N. has taken care should be more correct, definite, and precise, in the Transactions of the British Association, will be able to explain the delay.

It is enough for me that I am now in a condition to demonstrate the difference in question, and that to an extent which I could only suspect, while kept in the dark with regard to the volume I was accused of plagiarising from. My letter to Professor Phillips was the first necessary step towards obtaining the required evidence; and I thought the fairest way was to print it. Those who have perused that letter (MED. GAZ. June 19, 1840) will know what confidence to place in a reviewer who finds that in it I "resort at once to angry words and reckless abuse" (L. c. July 3, p. 596). Not to occupy more of your valuable space than is needful for my reply, I think it will be

admitted that Mr. Nasmyth's comments on the equivocal transaction, since its exposure, resolve themselves into these: "I had no occasion to make use of the modified memoir,—it was done for convenience merely: it is essentially the same as the published reports in the Athenæum and Gazette." And when it is shown that these do not answer the purpose, it is replied, "They are *bonâ fide* reports, for which I am not answerable, and contain inaccuracies, especially where they run counter to the theory of ossification of the pulp." I therefore proceed to show, first, the high probability that the Literary Gazette report is *verbatim* Mr. Nasmyth's own account of his views of dental development in August last; secondly, I shall demonstrate in what sense it can be called his own; thirdly, the nature and amount of discrepancies between the old and the new versions of the memoir will be illustrated. And since Mr. Nasmyth, in his letter of June 26th, has written me down "plagiarist," without adducing his proof, I may be allowed, in whatever transaction of his I may establish by adequate evidence, to call it by its right name, and illustrate it by fit examples.

First, let me state that I have received, by direction of the Secretary of the British Association, a proof of Mr. Nasmyth's memoir, now standing in type, as prepared for the eighth volume of the Transactions. In your number for June 19th, I could only state that the passages quoted from the Transactions of the British Association, vol. viii., to prove my plagiarism, not only did not exist in the authorized report in the Literary Gazette and Athenæum, but that it was diametrically opposed in meaning to the only paragraph in which the relation of ivory to the ossified pulp is alluded to in those reports. I inferred, therefore, that, in the new version of Mr. Nasmyth's memoir, containing the statement "that the ivory was neither more nor less than the ossified pulp," all the passages in the old version which either directly deny that fact or imply its negation, or which describe the deposition of ivory upon or its evolution from the formative surface of the pulp, or its formation by a transition of cells lying detached on the pulp's surface, must be suppressed or modified, in order to make the new memoir consistent with my theory and with itself. That this is the case the following examples sufficiently demonstrate. As you possess a private copy of

the corrected memoir, you will be able to vouch for the accuracy of my quotations;

and you will observe that the italics are Mr. Nasmyth's.

Version of August, 1839.

"He hoped, by a few facts, which he thought his investigations had placed beyond doubt, to pave the way for a satisfactory explanation of the formation of dental bone. On the surface of the pulp, he observed, are found innumerable detached cells, with central points."—*Literary Gazette*, Sept. 21, p. 598.

The description of cells with central points, or nuclei, lying on the surface of the pulp, is taken from Schwann. Their detached condition is an idea of Mr. Nasmyth's. How came a closely-packed layer of detached cells to be situated between the thin ossific layer of tooth and the formative surface of the pulp? Were they excreted, or exuded, or evolved from the surface below, or deposited on that surface by the ossific layer above? Perhaps Mr. Nasmyth will explain. I have shewn that these detached nucleated cells are *not* a natural state of things, but the result of a violent abrogation of the relation which subsists between the calcified and uncalcified portions of the pulp of the tooth. My observations and arguments to this effect have not been wholly lost on Mr. Nasmyth; yet he is unwilling quite to abandon Schwann's cells, which he describes as detached. Nevertheless, I affirm, in accordance with my theory of December last, that no part of the ivory of a tooth is at any period due to the calcification or transition of detached cells on the surface of the pulp, and that the restriction of such a condition of the pulp cells to the young tooth at the

Diffuse Memoir of August 1839.

"A comparison between the superincumbent perfect ivory and the formative surface of the pulp beneath is always easy."—*Literary Gazette*, l. c.

The succeeding paragraphs in the old version, descriptive of the deposition of the ivory in thin ossific layers on the surface of the pulp, and the consequent facility of their removal, are omitted.

Uncorrected Memoir, August 1839.

"It appeared to him that the framework of the reticulations or cellules of the pulp is constituted by the fibres of the tooth."—*Literary Gazette*, l. c.

Version of June, 1840.

"He should confine himself to a few facts which he had established, and which he hoped would throw some light on the subject. In the young tooth, he said, at the period of the formation of the first layer of ivory, there are found on the surface of the pulp innumerable detached cells, with central points."—*Unpublished proof.*

period of the formation of the first layer of ivory, although it may bring Mr. Nasmyth's Memoir of June 1840 something nearer to mine of last December, is yet, so far as it goes, as remote from the truth as the statement of August 1839, in which this detached condition of the nucleated cells on the surface of the pulp is applied, without reservation, to teeth of every age, and through the whole period of the formation of the ivory.

When Mr. Nasmyth, following Purkinje and Schwann, instead of nature, described the formative surface of the pulp as presenting a general cellular arrangement, which he illustrates by the simile of skeletons of desiccated leaves, he did not know that he was stating what was the result of artificial and violent laceration, instead of describing a natural formative surface. But, as if some suspicion of this fact had occurred to him in the course of his investigations of my Memoir, he, contrary to the assertion of your reviewer (*l. c.* p. 593), does drop the word "formative" in the following passage in the new or corrected memoir, as I suspected he would.

Concise Memoir of June 1840.

"A comparison of the superincumbent perfect ivory with the surface of the pulp beneath is always easy."—*Unpublished proof.*

(Compare *Lit. Gaz.* p. 598, with the private copy, or proof now standing in type.

The next statement is retained, but altered.

Corrected Memoir, June 1840.

"The fibres of the tooth, as it appeared to Mr. N., are derived from the framework of the reticulations."—*Unpublished proof.*

The unsuspicious reader might not esteem this transposition of cause and effect of much moment; not so, however, Mr. Nasmyth; he has craft enough to perceive that the alteration of this passage is so important for his design upon my theory of dental development, that he prints it, as garbled for that purpose, in italics, at least in the proof of his memoir as it now stands in type, and, I suppose, in the private copies which he has already distributed.

If, in fact, the cellular reticulation which the torn surface of the pulp presents when the superincumbent cap of ivory is displaced were a natural formative surface, and if the ivory were deposited upon it, as all writers preceding me, and among them Mr. Nasmyth, declared, either in the form of thin ossific layers, or spiral fibres, or by the transition of nucleated cells lying detached on the pulp's surface, then the ivory so deposited would impress the plastic surface of the pulp with its characteristic sculpturings or inequalities; and, so deeming, the writer would be correct in saying, as Mr. Nasmyth stated in August last, that the reticulations or the frame-

work of the cellules of the pulp were constituted by the fibres of the tooth. But on the theory of conversion or ossification of pre-existing cells in the pulp's substance the proposition must be reversed, as in the new version.

No one will believe it to be an accidental coincidence that the anonymous reviewer in the *Lancet* (June 6, p. 378), though quoting the paragraph in question from the *Literary Gazette*, and with conviction of his transposition inevitable, whenever the quotation should be compared with the original—I say, no one can believe that this hypothetical personage should, in order to establish a plagiarism for the benefit of Mr. Nasmyth, garble the passage precisely as Mr. Nasmyth, for the same purpose, has himself garbled it in his corrected proof of the forthcoming memoir, and, I suppose, in the private copies.

To prove that the reticular impressions of the (so called) formative surface of the pulp were due to the fibres of the superincumbent ivory, Mr. Nasmyth originally adduced their correspondence in diameter; and the paragraph assumes the following form in the new version:—

Old Version, August 1839.

“It appeared to him that the framework of the reticulations or cellules of the pulp is constituted by the fibres of the tooth, which, while in this state, are spirally coiled, and fit into one another. At all events, the diameter of these fibres of the reticulations is precisely that of the fibres of the ivory.”—*Literary Gazette*, p. 598.

New Version, June 1840.

“The fibres of the tooth, as it appeared to Mr. Nasmyth, are derived from the framework of the reticulations; at any rate, the fibres bounding the reticulations are precisely analogous in diameter and direction to the subsequent fibres of the tooth.”—*Unpublished proof*.

Now, one of the arguments by which I supported my theory of dental development in December last, was the correspondence of the linear series of pre-existing cells in the pulp's substance, *in direction*, with the subsequent tubes of ivory, into which they were converted. The anonymous reviewer in the *Lancet*, of June 6th, whom I take to be Mr. Nasmyth, seemed to think that ‘a correspondence of direction between given parts and those into which they were to be converted,’ and ‘a correspondence of size between certain impressions and the parts producing them,’ were identical propositions. But, in order to insure an agreement between his memoir and mine, Mr. N., now, not only reverses the relation of cause and effect, but also the order of appearance of the parts com-

pared: the fibres of the ivory, now, not only do not constitute the framework of the reticulations, but they are subsequent to them in existence; how they should also be parallel to them in direction, Mr. N. does not explain. According to my observation, the calcigerous tubes of the ivory stand at right angles to the direction of the lines which form the reticulations or cellules which the lacinated surface of the pulp presents. In Mr. Nasmyth's proof, however, as it now stands, and doubtless in the private copies, the writer states that he exhibited in August last at Birmingham, “diagrams in confirmation of this view”!

As to the paragraphs which next follow in the *Literary Gazette* report, and which include the illustrations of Mr. Nasmyth's notions of dental develop-

ment by deposition of thin ossific layers of ivory, or the transition of peripheral layers of detached cells with central points on the pulp's surface, and which illustrations he adduces from the known facts of the laminar decomposition of the mammoth's tusks, and the alternate strata of red and white produced by Hunter's experiments with madder, and which Mr. N. asserts to be a result incompatible with any other theory—as these paragraphs, I say, are too stubborn to be made to tell the new story by any process of transposition and mutilation, they are wholly omitted in the proof now in type: in the published abstract, prepared, despite his quibble, by Mr. N. himself, they occupy one column and a half of the closely printed page of the *Literary Gazette*, l. c. p. 598: thus we have the curious phenomenon of the abstract being longer than the memoir; the part greater than the whole.

I thought my conjecture, in my letter to Professor Phillips, as to the requisite extent of mutilation to produce con-

formity, somewhat hazardous; but the quantity of unsound parts in the original memoir which the author has found it essential to excise, surpasses all anticipation.

From the passage enuntiating the correspondence in size between the detached peripheral cells (cells of the pulp, in Mr. N.'s present proof) and those of the ivory, he proceeds at once to discuss the relation between the formation of ivory and ossification of pulp. All that Mr. N. advances respecting detached cells on the surface of the pulp, and the part these cells play in the formation of ivory, is taken from Schwann; but there were ideas broached in that excellent observer's treatise, which ran counter to Mr. N.'s notions of dental development in August last, and not anticipating the new light that was so suddenly to break in upon him, I find the following amount of correspondence between his paragraph touching the ossified pulp in the memoir of August, 1839, and June, 1840:—

Inconvenient Memoir, August 1839.

Schwann regards the dental substance as the ossified pulp, whilst Mr. N.'s observations lead him to conclude that the cells of the ivory are altogether a distinct formation.—*Literary Gazette*, p. 598.

To render this sudden conversion as decent as possible, Mr. Nasmyth looks about in the original memoir, as printed in the *Literary Gazette*, for the best point from which to jump to the new conclusion, and finds it in the proposition enuntiating the correspondence of size and appearance between the cells of the pulp, previously defined as lying detached on the surface, and the cellular fragments of ivory. And here again the new light is blazoned forth by Mr. N. in italics: he is unwilling to leave the discovery of his last adopted opinion to the chances, perhaps remote, of a regular perusal of his corrected memoir, but with all the tact of a quack advertiser, he takes care it shall catch the eye. But he is hasty: in August last, the cellular ivory was anything but the ossified pulp; now it is neither more nor less. My memoir of December last teaches, however, that the ivory is in some respects more than the ossified pulp, and in others less; and that its formation obeys peculiar laws, which differ from those of ordinary ossification. So that before the

Convenient Memoir, June 1840.*

"He concluded, therefore, *that the ivory is neither more nor less than the ossified pulp, and that it can in nowise be considered as an unorganized body.*—*Unpublished proof.*

new version goes to press, Mr. Nasmyth must again refer to my memoir, and again correct his proof, in order, in the disguise of an anonymous reviewer, to substantiate his charge of plagiarism. In that character, in the face of the review of my *Odontography*, again performed in your 41st number, (July 3d,) Mr. Nasmyth still harps upon the analogy which exists between his memoir, as printed in the *Literary Gazette*, for Sept. 21, and mine of the December following. Formerly he illustrated this analogy in the propositions respecting the organized structure of the teeth, and he has since offered no explanation or excuse for the unprincipled manner in which he misquoted my memoir to establish this analogy. He now cites another example in regard to the internal structure of the pulp. Need your readers be informed that I referred in my memoir to the anatomist Purkinje, to whom we are indebted for our knowledge of the granules

* "It was the most convenient and concise, as well as the only correct document for me to refer to on the subject."—Nasmyth, *Lancet*, July 11th, p. 567.

or cellules of the pulp, and that my business was to show, not the structure of the pulp, but how the pulp was concerned in the formation of the ivory. If Mr. Nasmyth can delude any one into the belief that he discovered either the cells of the ivory or the pulp, then let him represent me to that person as doing Mr. Nasmyth great injustice by not acknowledging him as the discoverer.

Nr. Nasmyth now asserts, "that in his papers, as reported in the Literary Gazette and Athenæum, he described the teeth to be formed by a process of ossific 'transition,' and consequently as not being inorganic in any sense of the word."—(Lancet, July 11th, p. 569.) I never said that he, or any writer like him, had denied the teeth to be organic. My memoir is asserted to be borrowed from those reports of September last, because it treats of the formation of ivory by transition. But the question is, transition of what? Of cells in the pulp's substance, or of cells transuded in layers from the pulp's surface, and lying detached on that surface? Oh! but says Mr. Nasmyth, I never used the word "transuded." Well, then, "evolved" from the surface of the pulp. These detached cells must have been secreted or excreted either from the surface below or the surface above, between which they are said to be detachedly situated. If Mr. N. said "that the cellular fragments found upon the surface of the pulp are in size and appearance perfectly accordant with the cellules of the pulp," he could be supposed to mean no other cellules than those which he had defined in the preceding paragraph. But the transition of detached cells, belonging to the pulp, in no other sense than as being transuded from it, is not ossification of the pulp itself. No; Mr. Nasmyth takes care that the readers of his Memoir of August last should not fall into that mistake; and he, therefore, expressly states, "that the cells of the ivory, instead of being the ossified pulp, are altogether a distinct formation." They were so far distinct in Mr. Nasmyth's mind in August last, that they formed a loose and detached layer on the pulp's surface, and were there converted into ivory; which is nothing more than a combination of Schwann's doctrine of the development of tissues by the metamorphosis of cells, with the old ideas of the transudation of the ivory in thin ossific layers from the surface of the pulp. If Mr. Nasmyth re-

ported in August last, that the ivory was formed by "ossific transition or transformation of the pulp's substance," why does he not settle the matter, and refer to any one passage containing that statement, which your readers might verify in either the Literary Gazette or Athenæum, or in any other work, whence it would have been possible to have borrowed it from him before the December following?

But the reviewer, well knowing the amount of Schwann's treatise which is smuggled into the memoir, which Mr. Nasmyth calls his own, is sure that there must be some correspondence between it and mine, and that injustice must be done to his friend by my passing him over in silence. Besides, Mr. Owen himself calls it an *able* memoir. Granted; but what is the nature of the ability which it displays? Ability to an unexampled extent in the amount of plunder engrafted upon it. Let me, according to my custom, give proof of this assertion.

Mr. Nasmyth, as is generally known, abstracted largely, in 1839, from a work by Schwann published in that year, and which I did not see till the following one. But then he abstracted, I find, only those passages which appeared to favour the ideas of dental development which he entertained in August last. These passages enunciate Schwann's notions of the formation of the cellular ivory by the transition or calcification of cells on the surface of the pulp, and which Mr. Nasmyth defines as detached cells: these by-Nasmyth-plagiarised observations, occupy the whole of page 125, and part of the preceding and succeeding pages of Schwann's "Mikroskopische Untersuchungen Ueber die Uebereinstimmung der Thiere und Pflanzen, 8vo. 1839." In Mr. Nasmyth's memoir of August last the wholesale plunder loads more than a column of the 598th page of the Literary Gazette (Sept. 21.) From the passage beginning with "According to Purkinje," and ending with "and of the dental bone," the report of Mr. Nasmyth's memoir, excepting that where Schwann asserts "Mr. Nasmyth observes," and that where Schwann believes "Mr. Nasmyth presumed," is a coarsely literal translation of the German author; including the only fallacious observations perhaps which could have been picked out of his book. The following are specimens of Mr. Nasmyth's originality:—

Schwann, l. c. p. 125.

"Diese in die Länge gezogenen kugeln sind nun offenbar cylindrische Zellen."

"Da sie auf der anderen Seite doch mit der Zahnschubstanz fester zusammenhängen als mit der Pulpa, und an der ersten hängen bleiben so vermuthet ich, das hier ein Uebergang statt findet."

But if he had observed for himself, instead of plagiarizing from Schwann, Mr. Nasmyth might have escaped this error, the nature and source of which my observation on the development of the shark's teeth enabled me to demonstrate.

Then again, when Schwann admits

Schwann, l. c. p. 126.

"Gegen die ansicht, dass die zahnsubstanz der verknöcherte Theil der Pulpa ist, hat man die leichte Trennbarkeit beider von einander eingeworfen, und ich erkenne das Gewicht dieses Einwurfs wohl an."

It might be here pleaded that the reporter mistook Mr. Nasmyth, and thought he was speaking of his own sense of the force of this objection, when he merely meant to quote Schwann's; but what does Mr. Nasmyth ascribe to himself, after having read my memoir proving the dentine to be in a certain sense the ossified pulp? Why the plagiarism in the MEDICAL GAZETTE (Jan. 3d, 1840, p. 541.) then assumes the following form:—"Gegen die ansicht," is now rendered "Against my theory;" and Mr. Nasmyth makes himself address the Medical Section at Birmingham as follows:—"Against my theory," said Mr. Nasmyth, "that the dental substance is the ossified portion of the pulp, the facility with which the one is separated from the other has been adduced, and he allowed the force of this objection." And then Mr. Nasmyth proceeds, nevertheless, literally to plagiarise the remark which Schwann offers as invalidating the force of this objection, suggested by the well-known fact of the facility with which the ossified separates from the unossified portion of bone-cartilage. Now I had myself invalidated Müller's argument drawn from the slight cohesion of the ivory to the pulp by the same obvious analogy of growing bone, but in other terms, long before I had

Literary Gazette, l. c. p. 598.

"These longitudinally drawn out globules, Mr. Nasmyth observed, are plainly cylindrical cells."—*Also Medical Gaz.*, Jan. 3d, p. 540.

"As they cohere more firmly with the dental substance than with the pulp, and remain attached to the former, Mr. Nasmyth presumed that here a transition takes place."—*Literary Gazette*, p. 598, and *Medical Gazette*, p. 541.

the validity of an objection to the theory of the ossification of the pulp, which I prove to have no weight at all, Mr. Nasmyth likewise, in August last, admits its force in the words of his author, and again with a modified version in January 1840.

Literary Gazette, l. c. p. 598.

"Against the theory that the dental substance is the ossified portion of the pulp, the facility with which the one is separated from the other has been adduced; and he (Mr. N.) allowed the force of that objection."

seen Schwann's excellent work. It is quite natural, therefore, that a dull-witted plagiarist, who never originated an illustration or idea in his life, should set down at once such a coincidence as necessarily standing in the relation of cause and effect; but I am much mistaken, if Mr. Nasmyth, by the time he has reached the end of this letter, does not discover that I am not the man who needs to be indebted to any one for an apt illustration.

And now such of you readers as have not been favoured with a private copy of Mr. Nasmyth's correct memoir, and know it only through Mr. Nasmyth's version, printed entire in the *Literary Gazette* for September 21, 1839, may be curious to learn how he disposes of the closely printed column of consecutive plunder from Schwann, since the new theory in the "*Comptes Rendus*" rendered this acquisition useless and unvendable. Here was a new difficulty; the plagiarized column would not tally with the new views. And what was to be done with this large and important share of the memoir of August 1839, when it came to be converted into the memoir of June 1840, became, doubtless, the subject of anxious cogitation. Mr. Nasmyth might have put a bold face upon the matter, and averred, as he before did in the case of similar difficul-

ties, that it was all a mistake of the careless reporter for the Literary Gazette; and that, instead of Mr. Nasmyth's 'observing' and 'presuming' in the borrowed wisdom of Schwann, at the Medical Section at Birmingham, to the extent of sixty consecutive lines of close print, he was actually quoting and refuting Schwann's paragraphs touching the transition of the superficial cells; but then he must have charged the reporter for the MEDICAL GAZETTE with precisely the same blunder. And, more provoking still, there was the unalterable text of the Literary Gazette ready at all times to prove that Mr. Nasmyth had exaggerated Schwann's doubtful leanings to the true doctrine—ossification of the pulp—in order to refute them.

What, then, was to be done? Why, he quietly drops the column of plunder from Schwann, when he finds it no longer worth keeping; and the new memoir, as it appears in the proof sent to me, is thus shorn of another third of its unfair proportions, as printed, in abstract, in the Lit. Gaz. So now the discovery of the formation of ivory is enunciated in the clearest and briefest terms; and instead of the reader being troubled with any of the inductive processes by which it was established, he is at once put into possession of it by the attractive artifices of type: "*The ivory*," says Mr. N., "*is neither more nor less than the ossified pulp.*"

Acquainted now with the mode in which Mr. Nasmyth's original memoir was fabricated, let us examine the validity of one of the statements which he makes in his recriminatory epistle in your forty-second number. He there disowns the report in the Literary Gazette; if we are to believe him, it is a *bonâ fide* report, subject to the ordinary inaccuracies of such productions. Yet, in sixty consecutive lines of the abstract of Mr. Nasmyth's communication to the Medical Section of the British Association, the supposititious reporter attributes to Mr. Nasmyth, observations, beliefs, and presumptions, without deviating a tittle from the text of Schwann, otherwise than in decorating the daw with his pilfered plumes. And again, either you, Mr. Editor, must have had the services of the same hypothetical reporter, or else we have the marvellous fact of two *bonâ fide* reporters reporting discoveries as narrated by an English soi-

disant discoverer in the accidental form of a literal German translation: for the same page of Dr. Schwann gives occasion to the same observations and presumptions of Mr. Nasmyth in your pp. 540 and 541, of the Gazette for Jan. 3d, 1840, as in p. 598 of the Lit. Gazette.

But if Mr. Nasmyth has thus unscrupulously plundered Schwann, he ought, in consistency, to abuse and damage him as far as he is able. And this he accordingly does, for before the plagiarism begins he informs the Medical Section at Birmingham that "Schwann acknowledges that he is ignorant of the process of transition, and he regards the dental pulp as a simple cartilage. In fact, "he starts with a ready-made hypothesis, and founds his opinion rather on the observations of others, and on the inferences he draws from them, than on his own actual researches: with respect to what he himself gives as his own, it accords for the most part with the details Mr. Nasmyth had first communicated." So poor Schwann is obliged to get even his hypothesis ready made to his hand. Modest plagiarist! your fate has been a just one, to steal whatever was apocryphal, and to reject those ideas of your author, which, if understood, might have conducted you into the right track to the theory of dental development.

But being opposed altogether to the doctrine of ossification of the pulp in August last, Mr. Nasmyth exaggerates every statement of Schwann's which leans towards that doctrine, *in order that he may refute him*. Thus he makes Schwann "regard the dental pulp as a simple cartilage." But, if Mr. Nasmyth had procured the whole of Schwann's treatise to be translated, he must have known this to be a false statement; and your reviewer, so far as he is not Mr. Nasmyth, and who, to that extent, must be presumed to possess the requisite learning for his craft, must know it to be untrue, although he quotes it, at p. 594 of your number for July 3d, as if it were not doing a great injustice to Schwann so to represent his statement. Schwann's word, are "The pulp agrees with all the other organs of the fœtus, and with cartilage, inasmuch as it is cellular. It differs in consistence from mammalian cartilage, inasmuch as the quantity of cyto-blasts (nucleated cells) which gives to cartilage its hardness, is very small, whilst there are numerous cylindrical cells lying

close together upon the surface of the pulp.

Again, Mr. Nasmyth drags Schwann's dubious expression of his inclination towards the ancient doctrine of the tooth being the ossified pulp, from a remote part of Schwann's treatise, converts it into a positive affirmation, and places it in juxta-position with the similarly falsified statement of Schwann's ideas of the relation between the dental pulp and cartilage; whereby the readers of the *Literary Gazette* are led to infer, that Schwann regarded the formation of tooth and bone to be identical processes, which Mr. Nasmyth accordingly refutes and denies, in August last, and now admits and affirms. And your reviewer, to reconcile these discrepancies, assures us (July 3d, p. 596,) that, when Mr. Nasmyth says the cells of the ivory are altogether a distinct formation from the ossified pulp, he means no part of the dental substance at all; and yet the title of his memoir, in the new proof, is, on the cellular structure of the ivory, &c.; and the conclusion to which Mr. Nasmyth arrives at the end of his (?) observations on dental development, is thus recorded by himself in the *Athenæum*, (Sept. 14th, p. 707.) "But in whatever respect," said he, "we view the formative organs of the tooth, and the dental tissues themselves, and whether we examine the latter during the process of their development, or after their formation has been completed, we are every where met by appearances which denote a cellular or reticular arrangement."

The case is this: Mr. Nasmyth, in August last, steals Schwann's account of the nucleated cells on the surface of the pulp, and so much of the theory of their transition into ivory as he can comprehend: he sees these observations only through the distorted medium of his old notions of the deposition of the ivory by successive thin layers upon the formative surface of the pulp; he accordingly makes the superficial cells "detached," and strangely jumbles together the doctrines of transudation and transition. Wherever he finds Schwann verging towards the true theory, that of conversion of the pulp's substance, he gives him a lift. He makes Schwann, *e. g.*, whilst indicating the difference between cartilage and dental pulp, assert their identity: and where Schwann modestly expresses his tendency towards

the ancient doctrine, "Ich möchte mich zu der älteren Ansicht hinneigen, dass die Zahnschubstanz die verknöcherte Pulpa ist," *l. c.*, p. 124, — this Mr. Nasmyth metamorphoses into an asseveration "that the dental substance is the ossified pulp," in order that he may display his superior knowledge, in August last, by its refutation.

The only passages on the development of the teeth attributed to Schwann by Mr. Nasmyth in the *Literary Gazette*, are quoted either to receive Mr. N.'s refutation, or to expose Schwann's ignorance: with regard to the details in which they agree, Mr. Nasmyth asserts that *he first communicated them!* and then Mr. N. proceeds to observe and to presume, for a whole column of closely printed type, in the very words of Schwann. And if he still affirms all this to be the mistake of the reporter, why did he not rectify it, divest himself of the borrowed plumes, and give Schwann his due in the next number of the *Literary Gazette*, instead of perpetrating the same dishonesty towards Schwann, aggravated by the additional spoliation of my memoir, in the *MEDICAL GAZETTE* of the January following?

Had Mr. Nasmyth consulted Nature instead of Schwann, he would have escaped the influence of Schwann's errors, and might have advanced further into the track of truth, instead of retreating from it; and he might have saved himself from the necessity of now tumbling awkwardly into this track, affirming vehemently what he denied a few months before I had demonstrated its truth.

That the dentine or ivory is the ossified pulp, is, as Schwann observes, an old opinion; but an opinion is not a theory. Almost every true theory has been indicated, with various degrees of approximation, before it was finally established: but the best philosophers agree "that he discovers who establishes the true theory." Whether the laws of dental development by centripetal calcification of pre-existing and pre-arranged cells in the substance of the pulp were discovered by Mr. Nasmyth or myself, physiologists will not be slow to discover. I should never have taken up the pen in defence of my right to that discovery, had it not been made the occasion of plotting and aiming at me certain slanderous bolts, which it will

now be seen have fallen wide of their mark, or to have glanced back on the shooter.

So much I have thought it requisite to premise in illustration of the character of the author who has foolishly sought to fasten that suspicion upon me, and of the mode in which his memoir of August last was manufactured. I have, likewise, given sufficient evidence in proof of the same author's tamperings with this same memoir, as he proposes it to appear in the Transactions of the British Association, vol. viii.

How Mr. Nasmyth has managed to anticipate the publication of the Transactions of the Association, at whose expense the memoirs of the contributors are printed, he will have to explain to the Council of the British Association. Such an act, in reference to the publication of either the Geological or Linnean Societies, would be attended with the expulsion of the anticipator, if even the surreptitious forestalling of the information, on the freshness of which the sale of the volume depends, had been motivated only by impatient vanity, and not perpetrated with a view to literary theft and anonymous slander.

It is in vain that Mr. Nasmyth, who referred, without reservation, to the accurate Reports of the Athenæum and Literary Gazette, when they were to establish a charge of plagiarism against another, now repudiates them, when he finds they bring that disgraceful act home to himself. He must be content that his views of dental development, in August last, be gathered from those journals with no other allowance than for such inaccuracies as he may be able to prove to the satisfaction of an impartial person. His assertion, though shouted in italics, will fail in stunning any one into the belief that his memoir "*given in the Transactions of the Association contains no interpolations whatever, nothing which was not contained in the papers themselves.*" Even CAPITALS would not convert the explicit negation of a theory into its emphatic adoption, unless, indeed, Mr. Nasmyth means now to deny that the ivory is cellular, and that cells form any part of its substance.

But it is plain that Mr. N. feels that the verdict of guilty is about to be returned against him, and, like too many unhappy men in the same predicament, he adopts the recriminatory line

of defence. He takes my memoir, as published in the *seventh* (he still harps upon the *eighth*) volume of the Trans. Brit. Association, compares it with the abstract printed in the Athenæum, &c. and discovers that the two differ. He finds that my abstract contains less than the whole of which it was a part; and amongst the additional matter, he seizes upon a specification of certain discoveries of two industrious German investigators, which I had acknowledged only in general terms in the previously published abstracts: he further finds that the special testimony which I bore to the accuracy of the discovery, and the extension of its application, of which no notice appears in the abstract, are mentioned in the memoir. Here's a flagrant case of interpolation, cries Mr. N. See how flagitiously this practice was carried on in 1839, says your reviewer! Strange, that in illustration of the odious system, they should be able to select, out of the additional matter that my memoir in the Transactions may contain, that passage only which illustrates a disposition and purpose the very reverse of those of which Mr. Nasmyth has been convicted: that these two persons, if they be two, should take the trouble to prove that my additional paragraph goes to ascribe to a contemporary the merit of his rightful discovery, instead of to deprive him of it.

I suppose the passage was selected because Mr. Nasmyth thought he had proof that it must have been a subsequent interpolation; and, reckless of the forfeiture of caste and character which follows gross violation of the confidences of social life and gentlemanly intercourse, he prints, without my knowledge or consent, my note dated April 1st, 1839. And what does he gain by it? He is thus able to prove that, as soon as I had it in my power to lend a copy of Purkinjé and Fraenkel's Treatise, I lent it to Mr. Nasmyth. This was, perhaps, an act of folly; but more foolish things have been done, even on the first of April, than rendering a civility to an ill-conditioned and thankless person.

I had studied, Mr. Editor, and was well acquainted with the discoveries of Purkinjé and Fraenkel, more than a year before I had a copy of my own to lend to any body. Your readers will find admirable notices of all their discoveries in dental anatomy in the

Jahresbericht, for 1836, of "Müller's Archiv. für Physiologie, 1837," and in "Froriep's Notizen," both which reached the Library of the College in December, 1837, and which I immediately, as is my custom, perused, extracted therefrom the new points, and went to work to confirm or otherwise by direct observation. With regard to the Thesis itself, I immediately took means to obtain it, and Mr. Nasmyth correctly establishes the date of its arrival. It is a work the interest of which is not exhausted by a first perusal, and I shall frequently, and always with pleasure, look into it again.

But what feeling does Mr. Nasmyth expect to excite in the minds of the unprejudiced readers of your journal by his attempt to recriminate the charge of interpolation upon me, and the kind of evidence which he brings forward in support of it? I give credit to Purkinjé and Fraenkel for a discovery; I lend Mr. Nasmyth their book; he takes advantage of the act to damage my character. He thinks it enables him to prove that I could have known nothing of their discoveries at the time I professed to acknowledge them. But Mr. Nasmyth only proves that when I had a copy of the work to lend, I lent it him.

Where shall we look for a parallel to this attempt to turn a civility into a weapon of attack? It is as if you were to overtake a cripple on the road, and, willing to help him on his journey, lend him your stick, the which he no sooner obtains, than with it he aims at you an impotent blow. But to imagine such a case is almost a libel on human nature. The actual parallel of Mr. Nasmyth's attack can only be found in the inferior species. You may see, *e. g.*, any day at the Zoological Gardens, an ill-favoured red-visaged baboon (*Simia rhesus*, L.); you may distinguish it from its quadrumanous congeners by the pertinacity with which it follows and stretches out its hand to the visitor who may possess an attractive dainty. Wearing by the beast's importunities, and amused, perhaps, by its supplicatory grimaces, he gives it what it wants; but, no sooner is the coveted apple acquired, than the ingrate ape flies at its benefactor, shakes the bars of his prison, and grins and chatters impotent malice with such vehement anger, that bystanders, ignorant of the brute's nature, might suppose that it had received an affront instead of a favour.

"*Simia quam similis turpissima bestia* n...". To finish the simile would be unjust both to the species and the poet, who meant to indicate the ape's resemblance to man in physical conformation only, not in psychical deformity.

But even Mr. Nasmyth seems to think that the additional matter which he quotes from my memoir might be deemed by some to reflect credit rather than disgrace on its author; and he dives again into his escrutoir, to fish out another weapon by which my motive may be assailed: and he prints, through your aid and co-operation, my note of December 11th, 1838.

He is conscious that the additional passage, quoted from the Seventh Vol. of the Transactions of the British Associations, as an instance of flagrant interpolation, simply renders to Purkinjé and Fraenkel the merit due to them for their discovery of the coronal cementum of the human teeth, and establishes their accuracy. Mr. Nasmyth, therefore, proceeds to show that the motive of this act of justice was highly reprehensible. "It can have been no other," writes Mr. N., "than that of appropriating to himself the discovery of the enamel capsule." (*Gazette*, June 26th, page 516).

Does Mr. N., then, mean to tell us that the new organ, his persistent capsule, or enamel-capsule, of which the discovery has been trumpeted forth in such various forms and places, is nothing more than the gelatinous constituent of the cementum of the crown of the human tooth, described by Purkinjé in 1835, and acknowledged long before by comparative anatomists as investing the crown of the teeth of the calf, and of all herbivora? If this be the case, I was deceived by Mr. N.'s description of his discovery in the MS. referred to in my note of Dec. 11th, 1839.

I revised that MS. with much pleasure, looking upon it as the first-fruits of the advice which I had tendered to Mr. Nasmyth five months before, viz. to apply the discoveries of Purkinjé and Retzius to the elucidation of the pathology of the teeth, and I again repeat, as in my note of July 25th, 1838, that it would be "a source of great credit, and a matter of importance, to whoever, practising in the line of dental surgery, should combine these discoveries with the practical or remedial part of the

subject." Now, in the manuscript which I recommended Mr. Nasmyth to present to the Medico-Chirurgical Society, I understood that the author's object was to elucidate the "eruptive stage" of the development of the teeth; I found him stating that he had investigated that stage very attentively, and was convinced that the capsule of all teeth was persistent, and that, instead of being deciduous, it was a membrane whose functions continued throughout life. The influence of this persistent membrane in preserving the enamel, and its relation to decay of the teeth, were then treated of."

This is the note that I took of the new point, as it appeared to me, in Mr. N.'s manuscript; and when the paper was afterwards referred to me to report upon, by the Council of the Medico-Chirurgical Society, I recommended it for publication, on the ground of its relation to dental pathology, and believing that Mr. Nasmyth meant what he wrote. I suggested to Mr. N. the possibility of his being deceived by the process he had adopted to demonstrate the so-called "persistent capsule," and that it might only be Purkinjé's coronal cementum, under another form and title; but my suggestion was not well received. In December 1838, the persistent capsule was, to Mr. Nasmyth, anything but the membranous part of Purkinjé's coronal cementum: his MS. then contained not the slightest allusion to that estimable author, or to his discoveries. As to what Mr. Nasmyth's new organ, or persistent capsule, really was, I thought it his business to satisfy the physiological world. So far as it might be shown to explain pathological phenomena, Mr. Nasmyth's remarks were worthy the attention of the profession; but it was my duty, as a teacher of physiology, to take care that no industrious investigators of dental anatomy should suffer either through Mr. Nasmyth's ignorance of their writings, or his unscrupulous appropriation of their discoveries. *Hinc illæ lachrymæ!* Assuredly the rancour of mortified vanity knows no bounds, as Mr. Nasmyth's attacks, and Mr. Tomes's misrepresentations, testify.

Prompted by recent experience, I perused, the other day, Mr. Nasmyth's memoir, as it appears in the volume of the Medico-Chirurgical Transactions, published in September 1839, and I

compared it with the reports of the same memoir, as read in January 1839, which appeared in the Gazette and Lancet for February 2nd, 1839. Such of your readers as may be disposed to make the same comparison, will find that Mr. Nasmyth has not only profited by the suggestion which I made to him, relative to the probable relationship which his new discovery bore to Purkinjé's coronal cementum of the human tooth, but likewise, and largely also, by my discovery of its presence in the simple teeth of many of the lower mammalia. (See *Trans. Brit. Association*, Vol. vii. p. 136.)

In January 1839, "the author begins by observing that of the three stages into which the period of the growth of the teeth has been divided, namely, the follicular, the saccular, and the eruptive, it is his intention, in the present communication, to allude more particularly to the eruptive stage only. Having been induced to investigate this stage very attentively, he is convinced that the capsule of all teeth is persistent." *Medical Gazette* and (*ipsissimis verbis*) *Lancet*, Feb. 2nd, 1839. And here, by the way, may be observed another instance of curious coincidence in the admiring reporters of Mr. Nasmyth's discoveries. But in the memoir, as printed in the volume of the Medico-Chirurgical Transactions, the author professes a loftier aim: finding that anatomists acknowledged that the crown of the teeth is coated with cementum only in the complex teeth of certain animals, he is led, by the philosophical desire to trace and illustrate the laws of conformity in Nature's works, to demonstrate the existence of the coronal cementum in all.

Now, between the period of the publication of the report of Mr. Nasmyth's paper "On the persistent Nature of the Dental Capsule," in February, and the publication of the memoir in September 1840, there appeared my memoir on the Structure of the Teeth, in the seventh volume of the Transactions of the Brit. Association, in which, at p. 136, after quoting Purkinjé's discovery of the coronal cementum in the human tooth, I confirm it, and show that it likewise exists in the simple teeth of many of the lower mammalia. Mr. Nasmyth's future contribution to any Publishing Society may henceforward be regarded as a "trap" for any discovery that may

fall in between the time of reading his memoir, and the publication of the Transactions, only he must be more chary of his abstracts; for they lead to conviction of the tamperings with the text, which the capture of the discovery necessitates.

In January, Mr. Nasmyth was convinced that the membrane he had discovered was the persistent membranous capsule. In September he says, "It is either a production of the capsule, or the entire capsule itself, or a part of it in a state of atrophy, ossified, and adhering to the enamel by means of the ossific matter deposited in it."—*Med. Chir. Trans.*, p. 313. He thus, in September, begins to make a gradual approach to the truth, and when he has quite arrived at it, he will find that the persistent capsule is neither more nor less than the gelatinous constituent of the coronal cementum, previously discovered in the simple teeth of the mammalia by Purkinjé and myself. Yet this person, since his cognizance of Purkinjé's work, and my Memoir on the Structure of the Teeth, sends to the Hunterian Museum preparations of human and calves' teeth, demonstrating nothing more than the gelatinous constituent of the coronal crusta petrosa, and has the effrontery to inscribe them as the "Enamel Capsule discovered by Alex. Nasmyth."

And now I come to the third of the complaints preferred against me by Mr. Nasmyth, by way of reply to my refutation of his first charges. This complaint is founded upon the facts of my having had temporary possession of a Translation of Retzius' Memoir, which Mr. N. asserts he had previously prepared for the press; of my having disowned any desire or intention of publishing any general observations on the structure of the teeth, *in which I had been anticipated* by the Swedish anatomist; and thirdly, by the fact that I had "published certain new general observations on the structure of the teeth, with practical deductions," though not, I hope, all that I am capable of making, as Mr. N. gratuitously asserts. These three allegations I admit, and have, first, to reply,—that with respect to whatever novelties in dental anatomy I have published, it will be found that the discoveries of Retzius and other anatomists are alluded to with no more detail than was essential to the reader's compre-

hension of the new matter I had to treat of. Secondly, I affirm that I have been in no wise indebted to, or dependent upon, the translation of Retzius, which Mr. Nasmyth lent to me in the course of the summer of 1838; but that I acquired my knowledge of the Swedish anatomist's discoveries, from a study, six months before, of Dr. Creplin's German Translation of Retzius' Treatise, published in Muller's Archiv. for 1837, which reached me early the following year. The translation which Mr. Nasmyth had procured was sent to me, not as prepared for the press, but rough from the hands of a translator evidently ignorant of the subject and of its technical terms: I returned it to its owner, corrected by means of a comparison with the text of Dr. Creplin, and with the proper technical words added.

There are still, however, some odd blunders in it, which would almost justify a suspicion that it had not received the benefit of a zoologist's revision; but these are due to subsequent interpolations of Mr. Nasmyth. Take an example: Mr. N. found in his corrected translation, as returned by me, the Swedish word for alligator rendered *Croc. Lucius*. This seems to have puzzled him, being as much an adept in zoology as Swedish. However, he goes to the Latin Dictionary, and finds *Lucius*, a pike: and with this additional information he proceeds to stultify the amended text in preparing it for press. If your readers will turn to p. 99 of the published translation, vended under the title of Mr. Nasmyth's Researches, &c. they will find Retzius made to say—"The teeth of the *crocodile* and of the *pike* have a covering of enamel on the crown, and a tolerably thick coat of cortical substance on that part which is situated within the alveolus," &c.; and a little further on, at page 104, where Retzius is actually speaking of the *Esoc. Lucius*, Mr. N. says, "In the common *pike*, as in most fishes, are found a number of unequally developed teeth, from the smallest loose points to the teeth immovably fixed to the jaw by a solid osseous base. On none of these could Retzius, by means of the microscope, perceive any covering of enamel."

Now these two contradictory propositions respecting the teeth of the pike are contained in the same sheet (H 2),

which may have passed two or three times through Mr. Nasmyth's hands before it went to press. Yet this obtuse individual seems to have been as little struck with the pleasant inconsistency of a pike's tooth having and not having a covering of enamel on the crown, as your reviewer with that between the statements that the ivory is neither more nor less than the ossified pulp, and that the cells of the ivory are altogether a distinct formation.

By a similar but more reprehensible, because wilful, obtuseness, Mr. N. having recourse again to a confidential note, adduces therefrom *the negation of an intention to publish Retzius's discoveries*, and the facts of my subsequent *publication of discoveries, not Retzius's*, as evidence of a versatile disposition. He converts the expression of an absence of desire to publish observations on the structure of the teeth, previously made by another person, into the denial of an intention of bringing before the public any general observations at all on that subject.

Now, as I have thought it worth my while to notice any of the calumnies of my protean tradueer—for I am not ignorant that I might now, as on other slanders, with the least temporary loss of reputation, have used no other defence than silence and sufferance, and honest deeds set against dishonest words—yet as I have striven to say clearly what might wipe off any blemish which my adversary has sought to leave on my good name, I may again state that, in my published accounts of novelties on the structure or development of the teeth, it will be found that the discoveries of Retzius, and other anatomists, are alluded to with as much brevity and succinctness as was consistent with the intelligibility of the new matter I had to treat of: the translation of Retzius and Purkinjé's General Observations on the Teeth I left to Mr. Nasmyth, than whom no one has profited more by the additional advance in dental physiology, which is due to my own proper investigations and discourses.

But he informs us that he was "naturally vexed, and that not a little," at these contributions of mine; and then, as deluded with respect to his own importance and attractive qualities as ever was the honester Malvolio under the influence of his crossed garters and yellow stockings, he vapours forth "his

indignation that a person, calling himself his friend," should presume to give to the world any novelty in dental anatomy at all. He says he was *naturally vexed*, as though it were in human nature to be otherwise. But when Mr. Nasmyth reveals so much of his nature, he, perhaps, did not think that he might be reminded that, in the human species, the naturalness of the act is according to the nature of the individual, and, in the lower animals, according to the nature of the beast. As, *e. g.* Craft is natural to the fox. To steal precious things is the nature of the daw and magpie. It is natural to the hog to wallow in the mire. To receive a favour, and jabber impotent malice at the donor, is the nature of a baboon.

And so, when a man of science devotes the little leisure and cash he may have to spare to the advancement of dental anatomy, and instead of reserving his discoveries for the benefit of one, publishes them, without eye to profit, for the benefit of all, while other dentists are grateful and applaud the act, to be enviously vexed and indignant is the nature of a Nasmyth.

But Mr. Nasmyth's revelations of his own nature do not stop here: it appears to be likewise natural to him to dissimulate this his envious vexation for a considerable period, and he tells us 'that, nevertheless, he remained silent on the subject, hoping that my interference' with his plagiarisms of better men's discoveries, as they successively came into his 'trap,' would cease.

Here, however, his assertion is as little consistent with the fact, as that of his having taken no part whatever in the simultaneous calumnies aimed at me in the *Lancet* and *Gazette*, for June 5th.

Instead of nursing his no-small wrath* in silence, he hypocritically volunteers upon my 'reports' his fulsome praise, with the reservation that I, like Schwann, had only arrived at the same conclusions, which he had first announced. — (*See 'Researches on the Teeth,' of A. Nasmyth, p. 123.*) Then, again, when, writhing under the exposure of the unprincipled means to which he had resorted, in order to sustain his charge of plagiarism, and regretting that he had exposed himself to that exposure,

* "The appearance of his 'voluminous' reports naturally vexed me not a little."—*Nasmyth, in Gazette, June 26th, p. 549.*

he is not ashamed to own that 'his motive for so doing was very natural.' No doubt; but very disgusting nature, at the same time.

There is one statement of mine that Mr. Nasmyth has thought fit to publish, which I regret to see in print, as I never meant it for the public eye. It is, that I once thought myself a discoverer of the tubular structure of the teeth. As, however, I have represented myself in that light to others, besides Mr. Nasmyth, to whom I exhibited my preparations of the teeth, between the months of May and December, 1837, I will state briefly how I fell into that belief. I received from Mr. Darwin many fragments of the teeth of the *Megatherium*, *Megalonyx*, *Myiodon*, and *Toxodon*, soon after his return from his travels in South America. Some of these fragments were in a state of incipient decomposition. Instead of being resolved, like the fossil mammoth's tusks, into parallel superimposed lamellæ, they separated into fine fibres, running at right angles to the plane of the layers, of which, at that time, it was believed a tooth was composed. I exhibited the most characteristic of these specimens at my lectures on the teeth, at the College of Surgeons, in May, 1837, and stated that the appearances they presented were inexplicable on the (then as I supposed) only known doctrines of dental structure; I said that I should investigate the subject further, and endeavour to reconcile the apparent anomaly before the following session.*

At the conclusion of that course, I had sections of these fragments prepared for the microscope; and stimulated by the amount of clearly defined and beautiful structure which they exhibited, I proceeded to examine similar sections of the human teeth, and of those of many of the lower animals. The excitement of the research became heightened as I advanced, and I had collected extensive materials for a treatise on the general structure of the teeth, when the number of Müller's Archives, containing that part of his 'Jahresbericht' analysing Purkinjé's treatise, came into my hands,

in December, 1837, and awoke me from the fair dream of discovery in which I had been indulging: I soon after received Dr. Creplin's translation of Retzius, upon which I abandoned 'my intention of bringing before the public any of the general observations on the structure of the teeth which I once thought were new, but since found to have been mainly anticipated by Purkinjé and Retzius.' I thenceforward devoted the leisure, which I had to spare for that purpose, to new applications of the principle of the tubular structure of the dentine, to its investigation in animals not before examined, and more especially to researches into the laws of development of the dental tissues, which, as then taught, were greatly at variance with the new views of the structure of the teeth. These researches have been published in the 7th volume of the Transactions of the British Association; in the Proceedings of the Geological and Microscopical Societies; in the Comptes Rendus de l'Académie des Sciences; and in so much as has yet appeared of my Odontography. Mr. Nasmyth asserts that he has anticipated me in the application of the microscopic structure of the teeth to the elucidation of fossil remains; and Mr. Tomes says there is great reason for believing that I got the idea of working at the subject from him and his preparations: I affirm that I was incited to, and did labour in this department of anatomy, long before I had the misfortune to see either of these persons.

With respect to the application of the micrography of the teeth to fossil remains, let me state that, hitherto, the instances on record are as follows:—

The *Basilosaurus* of Harlan has been thus proved to be a cetaceous mammal, not a saurian.

The *Sauropscephalus* has been shown to be, not a saurian, but a sauroïd fish.

The *Megatherium* has been demonstrated to be, as Cuvier contended, more nearly allied to the sloths than, as De Blainville supposed, to the armadillos.

The *Glyptodon* has been proved to be a giant armadillo, and to have the rightful claim to that colossal bony armour which before was placed upon the shoulders of the *Megatherium*.

A character has been elicited, which Agassiz despaired of, whereby the

* In Hunterian lectures, for 1837, I treated of the teeth in their relation to the skeleton; in 1838, as parts of the digestive system, when I detailed fully the discoveries of Purkinjé and Retzius, and my own additional observations; in 1839, I considered the teeth in their analogies with the epidermoid system, and pointed out the characteristic differences in their mode of development, illustrated by diagrams of my observations on the teeth of the fetal shark.

genera *Lepidotus* and *Spharodus*, rarely represented save by detached teeth, precisely similar in outward form, can now be distinguished from each other.

Which of these discoveries will Mr. Nasmyth contend I plagiarised from him? Why, if any thing else had been wanting to fix upon him the authorship of the slanderous review in the *MEDICAL GAZETTE* for June 5th, it was his assertion that he had anticipated me in this application; for the instances of such application still remain hidden in his own breast. No one, save himself, as yet knows of his discoveries in this field.

And now I come to notice two other attacks in your journal, by which it is attempted to divert my attention, and that of your readers, from the vulnerable points of Mr. Nasmyth's.

The first professes to come from a "M.R.C.S. residing at a distance from London," complaining of the miserable state of the arrangement, display, and catalogue, of the Hunterian Museum, which I shall leave to speak for itself: the onus of the charge being, that the distant member was refused access to the microscopic preparations of osseous tissues, &c. with which I had illustrated my lectures. Now as it happens that Mr. Nasmyth is the only person who, upon application to the Museum Committee, to use these specimens, has been refused—such specimens not forming part of the collection, but being my private property—I conclude that the 'distant resident from London,' like the editorial 'we,' and the editorially-discarded reviewer, is but another of the disguises in which Mr. Nasmyth has indulged his natural indignation in raking up malicious slander against me.

But crimes, like diseases, are contagious, and no sooner does Mr. Nasmyth—one set of charges preferred against me being refuted—rake up another from the contents of private letters, than his friend Mr. Tomes, recollecting conversations and events that took place in May 1838, next volunteers his version of them to prove that I have no claim to priority in making known to an English audience, or to English readers, the tubular structure of the teeth.

When Mr. Tomes was introduced to me as a discoverer of this structure, I had been working at the subject eleven months, and the number of preparations which I then possessed exceeded a hundred. Backed by the authorities, who had assured him of the novelty of his observations, I found them very difficult to be convinced of their anticipation by Purkinje and Retzius. He received from me the best information I could give him. I showed him as many of my preparations as my time would allow, especially those of the *Megatherium* and *Acrodus*, which best illustrated the analogy of ivory and bone. It was the interest he expressed at seeing these specimens that induced me to furnish him with fragments of the portions of teeth from which they were prepared. He told me he did not understand the German language; but I shewed him the illustrations appended to Creplin's German Translation of Retzius, in Müller's Archives, and the diagrams I had copied from them to illustrate Retzius's discoveries. This fact it does not suit Mr. Tomes to remember; it would not square with Mr. Nasmyth's assertion that I first became acquainted with Retzius's discoveries through the medium of the translation which he, Mr. N., had prepared for the press. And such are the men whose envious carplings and calumnies my time is to be wasted in refuting.

That mortified vanity should impel a man to revenge himself by deliberate misrepresentation, after the instance of Mr. Nasmyth, needed no further illustration by Mr. Tomes.

It is a very unpleasant task to undeceive a man who comes to you under the delusion that he is a discoverer; it is still more disagreeable when such a person, persisting in his delusion, obtrudes his anticipated observations on the Royal Society, and compels you to reject them; and I can assure Mr. Tomes, whose anger on both accounts appears to have been waiting for a vent since 1838, that to no one can these duties be more painful than to, sir,

Your very obedient servant,

RICHARD OWEN.

July 12, 1840.

THE LONDON MEDICAL GAZETTE,

BEING A
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OF
Medicine and the Collateral Sciences.

FRIDAY, JULY 24, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISLOCATIONS, *continued.*

PATELLA—FIBULA—FOOT—ASTRAGALUS
—TARSUS—METATARSUS—TOES—*Their*
Characters and Treatment. WOUNDS—
Non-Penetrating, Penetrating, Symptoms,
Diagnosis, Prognosis, Anatomical Changes,
Treatment. ARTHRITIS—*Nature, Treat-*
ment. WHITE-SWELLING—*Nature, Symp-*
toms, Diagnosis, Treatment, Varieties affect-
ing the several tissues of joints.

PATELLA.

DURING flexion of the leg, the patella tends to lodge itself between the condyles of the femur, and at that time it is not very prominent; extension brings it up higher on the femur, and it is then very prominent. In the first case it is fixed, in the second we can impress upon it lateral movements; in both cases the internal edge is most prominent, because it is thicker: blows directed from within outwards might, therefore, naturally be expected to have more effect in displacing this bone than those in an opposite direction. From these data we may naturally conclude, that dislocations would be as much easier as the leg is more extended, and that dislocations outwards would be most frequent. It has ordinarily occurred by the knee coming violently in contact with some angular body, during running or riding. If the internal border has received the shock, the patella is carried outwards; if the external, it is inclined in the opposite direction. These disloca-

tions are called incomplete; yet, they cannot occur without a violent dragging or destruction of the capsule, which is inserted upon the edges of this bone. Displacement may be carried so far as to place one border anterior, the other posterior; the anterior and posterior surfaces becoming lateral. These dislocations have been flatly denied, and no doubt many so called are not so; thus, in an observation contained in the *Gazette Méd.* 1831, p. 266, it is said that complete dislocation resulted from turning in bed: such a dislocation from such a cause necessarily implies anomaly in the condition of the joint; probably a relaxation of the ligaments, and a want of prominence in the condyles. Luxation of the patella upwards or downwards would imply rupture of the ligamentum patellæ, or that of the rectus of the tendon; and of those rare cases we have already spoken. The characters of incomplete dislocation outwards, which is the ordinary dislocation of the patella, are as follows: what first arrests the attention is the prominence of the external margin of that bone, and that of the internal condyle; between those two points there is a depression, which corresponds to that part of the internal condyle which forms the internal side of the femoral pulley: we feel the tension of the tendon of the rectus and the ligamentum patellæ; the leg is extended, and cannot be flexed. The dislocations inward present the same characters, but in the opposite sense, the principal prominence is formed by the internal border of the patella, the other by the external condyle of the femur; there is the same extension and immobility of the leg as in the former case. Incomplete is less dangerous than complete dislocation of the patella; the laceration of parts is less. Dislocations from external violence are more serious than those produced by muscular action, because they suppose a condition of the joint favourable to displace-

ment; they are consequently less dangerous, but more liable to recurrence.

At the first blush we might be induced to think reduction would be easy, because the bone is subcutaneous, very accessible, and placed upon a glistening surface. It would seem that it was only necessary to press slightly upon its border to effect its reduction; experience has shewn the contrary, and cases are not wanting where surgeons have abandoned the task in despair, or called in more skilful operators. Boyer states that in a case of outward incomplete dislocation, such an accomplished surgeon as Sabatier failed; he called in Boyer, who succeeded, it is true, but after many fruitless attempts. The principles on which reduction should be based are, I apprehend, these: first, it is necessary to relax as far as possible the tendons of the extensors of the thigh, and the ligament of the patella; for this purpose an assistant raises the extended leg, so as to flex the thigh upon the pelvis, and the surgeon presses upon the prominent border of the patella, depressing it, and at the same moment pushing it in a direction opposite to the displacement. Mr. George Young, in such a case, got the foot upon his shoulder; with one hand he pressed down the thigh to make extension as complete as possible; with the ball of the thumb of the other he pressed upon the patella and reduced it.

FIBULA.

Dislocation of the superior extremity of the fibula is regarded rather as a possible accident than as a displacement whose occasional existence has been demonstrated. It is so little moveable, so little exposed to external violence, that dislocation at this point can scarcely happen. It is generally supposed that it can only result from a direct cause, acting forwards or backwards; that it may be easily detected, by a prominence caused anteriorly or posteriorly by the displaced head of the fibula; that the reduction would be easy, since all that would be necessary would be to push the displaced bone in an opposite direction to that which it has taken; that a bandage should be rolled round the part; upon which, if necessary, lotion may be applied. Besides the case mentioned by Gooch, I only recollect a single case in which displacement to any considerable extent had occurred; it was that of a woman received into the Hôtel-Dieu; a wheel had passed obliquely over the upper and outer part of her leg; the ligaments of the articulation of the fibula with the tibia appeared to have been ruptured, and the head of the fibula could be easily moved backwards and forwards; but as soon as it was left to itself it returned to its proper place. It is not un-

likely that in this case the head of the bone had been fairly dislocated, and that reduction had been accomplished, by the resistance of the muscles and aponeuroses, which are attached along the whole length of this bone. So far as it goes this fact would seem to prove that permanent displacement of the superior extremity of this bone is very difficult, if not impossible.

It is generally believed that isolated dislocation of the *inferior extremity* of the fibula cannot happen, because the power of the ligaments which attach it to the tibia is so great that the bone would give way first. Boyer, however, mentions a case in which the foot was dislocated outwards; the fibula pushed by the astragalus gave way upwards and outwards; it was reduced at the same time with the foot. In most cases unquestionably the fibula is fractured; and it is probable that in Boyer's case there was relaxation of the ligaments, to which allusion has been made.

FOOT.

By dislocations of the foot, I mean, in this place, in fact, dislocations in which the relation of the astragalus with the tibia is changed; and they are distinguished, according to the position taken by the superior articular surface of that bone, into *outward, inward, forward, and backward*: thus, it is inward when that surface is directed towards the inner ankle; outwards when it is directed towards the outer ankle; forwards when it is directed towards the toes; and backwards when it inclines towards the tendo-Achillis. There may be at the same time a displacement of its surfaces of articulation with the calcis and the scaphoid bone.

Great as is the strength of this articulation, lateral luxations are not rare; most frequently, however, the direction is inwards; this happens as a consequence of the greater frequency of falls on the internal margin of the foot, and of the action of the peroneal muscles, which during excited action tend to raise the outer, and consequently depress the inner border of the foot. In this case the superior surface of the astragalus being inclined inwards, it projects below the inner ankle; the dorsum of the foot is also inclined in the same direction; its plantar surface is inclined in the opposite direction. The internal lateral ligament, and sometimes those which attach it to the fibula, are replaced; sometimes the fibula is fractured. It may also happen that the internal malleolus pierces the integument and projects externally. The next in frequency is the dislocation outwards; it is produced by causes similar to those we have just considered, but acting in an opposite direction. In this case the astragalus, after having destroyed the three

external lateral ligaments, is placed below the malleolus of the same side; its superior surface inclined outwards; its external downwards; the dorsum of the foot is turned outwards; its plantar surface inwards. Sometimes, as in a case I lately had under my care, there is a separation of the bones of the leg, and the space between the two ankles is much increased. After lateral luxations the next in frequency is the backward variety; it is, however, very rarely seen: it can scarcely be produced by a simple flexion of the foot, however far it may be carried, because the neck of the astragalus tends to arrest this movement by its contact with the anterior margin of the articular extremity of the tibia: it more frequently is produced by a fall from a height on a bank or inclined plane: then the sole of the foot rests on the ground; if one foot supports the shock, the thigh and leg are extended; the line represented by the tibia falls obliquely upon the astragalus, glides in front of its pulley, and the force which represents the weight of the body passes through this line, so that the extremity of the tibia is carried forwards, towards the toes; the astragalus remaining behind or being pushed backwards: it was in this way that Boyer's case was produced. Many cases of incomplete luxation are on record. We had a very well marked case the other day in the Infirmary; and in the opposite bed was a case of dislocation inwards. The dislocation backwards is characterised by elongation of the heel; the extremity of the tendo-Achillis is carried backwards; the anterior part of the foot is sensibly shortened by the projection forward of the inferior extremity of the tibia; in front of the projection is a transverse fold of integuments; there is generally, but not always, immobility of the foot, especially if there be fracture of either malleolus. Dislocation *forward* is extremely rare, if it has been observed at all; in the movements which tend to produce it, there is more commonly dislocation of the astragalus upon the bones of the tarsus; more frequently still, fracture of the malleoli. The accident by which the displacement might be produced is uncommon: a violent extension of the foot, the body falling backwards, whilst the foot is retained by some insurmountable obstacle. Authors state that in this case the anterior part of the foot is elongated; that the extensor tendons of the toes are raised in front of the joint by a hard, rounded, large tumor, formed by the pulley of the astragalus; the foot is immovable, and firmly extended; the heel shortened.

When we consider the great power of the ligaments which attach the astragalus to the tibia, and the support which the

ankles give to the joint, we may readily conclude that dislocations cannot happen without much violence; that they can rarely be simple; that there will be much injury to the soft parts; often much effusion of blood; ruptured ligaments or fractured bones; or wounds communicating externally, with protrusion of the tibia or the astragalus, or both: they must, therefore, be very grave injuries. In the most fortunate cases they leave after them for some time considerable stiffness at the affected joint. In other cases ankylosis is the result; in others the ligaments remain for a long time very feeble, and increase the chances of subsequent displacement. Very frequently the consequences are still more serious; always accompanied by severe pain; quickly followed by considerable tumefaction, and violent inflammatory action, which may quickly determine gangrene of the leg, or occasion deep and extensive abscesses, necrosis, or caries, or exfoliation of fibrous structures about the joint: they may necessitate amputation. Still, as the gravity of the symptoms bears a certain relation to the extent of the displacement and the contusion of the soft parts, and these are almost infinitely varied, it must be evident that complete dislocations may terminate in one or other of the modes I have mentioned. Incomplete dislocations, in which the displacement of bones and the contusion of soft parts are less, differ little in gravity from violent sprains, and they may consequently often be cured with ease and promptitude, and without leaving traces in the joint. Dislocations backwards and forwards, which are usually accompanied by a smaller amount of destruction of parts and displacement, are also more easily cured than those cases where the displacement is lateral. Fracture of the malleoli accompanying dislocation, when not comminuted, is not always a circumstance of much aggravation; indeed it is a matter of observation, that many persons, in whom this is the only complication, often do well. Destruction of the integuments and protrusion of the tibia constitute the worst kind of complication. It is particularly in those cases that gangrene is rapidly developed, and the patients die before it is limited by a line of inflammation, and amputation itself often fails; yet wounds with protrusion of bone are not always so grave or so fatal: many examples of cure in such cases are on record.

Treatment.—Reduction of these dislocations, when lateral, is usually easily accomplished: the patient is placed on a bed; the leg, flexed on the thigh, is grasped by a strong assistant; another seizes the foot, as if about to make extension in the fractured leg; he draws the foot in the

direction of the displacement: as soon as he feels the resistance vanquished, and the bones disengaged, he brings the foot into a proper position by adducting it if the dislocation be inwards; abducting, if it be outwards; by bringing it forwards, and flexing it, when it is backwards; by extending and carrying it backwards, when it is forwards. The surgeon, during this time, is on the outside of the leg: with one hand he grasps the small of the leg; with the other the foot, and assists in giving the right direction to the efforts of reduction.

When displacement is forwards or backwards, the difficulties of reduction are sometimes insurmountable. These difficulties are probably owing to the resistance of the lateral ligaments, when they are not ruptured. It is easy to understand that, after having yielded, by elongation, to the force which has displaced the astragalus, they may relapse into something like their former state when the astragalus has passed forward or backward; so that to reduce it it is necessary to elongate them anew: this can only be effected by using a force equal to that which has originally determined the displacement, and can scarcely ever be accomplished.

If we are so fortunate as to reduce the dislocation, we place the limb in the most perfect repose—generally in a fracture apparatus; we carefully prevent any motion at the part, and we use the necessary means to prevent or repress inflammatory action. Those means, if the patient be in good health, are, large local and general bleeding, nauseating doses of antimony, and cold: purgatives have the inconvenience of rendering movement necessary. The other means must be proportioned to the necessities of the case. I have known a case so urgent as to require sixty leeches at once, besides a general bleeding to the extent of thirty ounces; but, in the worst case I ever saw, a case of dislocation, with fracture and protrusion, the patient refused to submit to amputation: thirty leeches only were applied; they were immediately followed by cold water compresses, which, through the affection of a sister, were renewed every ten minutes for twenty-four hours, and the inflammation never exceeded what was necessary for the purpose of reparation. When the dislocation is complicated with fracture of the malleoli, after reduction, it is always prudent to place the limb in a fracture apparatus: if, when there is protrusion, the contraction of the lips of the wound be great enough to prevent the reduction of the protruded bone, the wound should be dilated; and if this do not suffice, the end of the bone should be sawed off, if there be fair ground for believing that the injury can be repaired;

if not, immediate amputation should be practised.

ASTRAGALUS.

The connections of the astragalus with all the bones with which it articulates may be ruptured; but it is a rare occurrence. It occurs under circumstances similar to those we have just considered as destroying its relations with the bones of the leg. It is easily discovered by the projection of the astragalus under the integument. It is most frequently caused by violent extension of the foot, with an inclination inwards or outwards. In Sir A. Cooper's case, and in others, the integument has given way, and the bone protruded; but, as I mentioned some years ago, it may occur under exaggerated flexion; the two cases I then published are evidence of this fact. In one of those cases the patient jumped from his carriage upon the side of a bank, and fell forward; in the other, the patient was fielding in cricket; he was running after the ball, when the heel was jammed into a gutter, and he fell forward. In both cases the astragalus was pushed back from between the tibia and calcis, so as to cause the tendo-Achillis to describe an angle of between forty and fifty degrees.

Those dislocations of the astragalus are a consequence of so much violence, that much inflammatory action might be expected. Reduction should usually be attempted; but it will rarely succeed. If any fibrous or ligamentary tissues seem to prevent the return of the bone, it has been recommended that they should be incised. In some cases a portion, in others the whole of the bone, has been extracted successfully. In my cases reduction was impossible; but, as there was no protrusion, I did not think it prudent to cut down upon and extract the bone: the inflammatory action developed at the part was not great, and the lameness was not, after some months, very obvious: the tibia rested upon the calcis, and a joint was formed between them.

TARSUS.

Heavy weights falling on the tarsus have, in a few cases, occasioned displacement of certain of these bones; they have changed the relation of the calcis with the astragalus, and with the cuboides and naviculars in front.

Sir A. Cooper has seen dislocations of the internal cuneiform bone, the head of the bone naturally articulating with the naviculars, projecting inwards and upwards, drawn in that direction he conceived by the tibialis anticus muscle. Reduction was not accomplished, and there was very trifling lameness. He advises that the bone should be confined

by a strap passed around the tarsus. In such cases the injury of the soft parts is usually the most serious part of the accident.

METATARSUS.

The metatarsal may be dislocated upon the tarsal bones. I am aware this has been denied by all authors who have written specially upon the subject of luxation. It has been regarded as impossible, in consequence of the extent of the articular surfaces, the strength of their ligaments, and the little motion of which they are susceptible; yet there are several cases on record.

To conceive how it happens, we must examine what passes when we walk upon the toes, or the front of the foot. The centre of gravity is then in the tarso-metatarsal articulation; this is found between two diametrically opposite powers; the one, the weight of the body, tending to depress the tarsus; the other, the resistance of the soil, tending to raise the metatarsal bones. The foot being in this condition, any thing tending to increase the force bearing upon the already tense ligaments, such a displacement may occur; the tarsus is pressed down, the metatarsus up, and the latter is dislocated upwards. Dupuytren alone saw two cases; a third is contained in the Bulletin of the Société Anatomique. Dupuytren's first case was that of a woman carrying a heavy burden: she stumbled forward, so that the foot supported the whole weight of the body. At that moment, to prevent a fall, the body was brought forward on that foot in which the displacement occurred. The leg was flexed, the heel strongly raised, and maintained in that position by the contraction of the muscles of the calf, so that the weight of the body was supported by the anterior half of the foot. In his second case, the accident happened to a young man, in a state of intoxication, who jumped into a ditch twelve feet deep: he fell on the point of the feet, and dislocated both metatarsi at the same time. Mazet's case was also a young man: he died, and, upon dissection, it appeared that there was dislocation of all the metatarsal bones.

It does not seem to have been difficult to distinguish this accident. The foot is shortened by the riding of the bones, the metatarsal bones are very prominent under the integument of the dorsum of the foot, and the arch of the foot is almost destroyed by the depression of the tarsus.

If recent, this accident is not attended with very serious consequences; the reduction is not difficult; but, if left to itself for a few days, reduction may become impossible.

Treatment.—In proceeding to reduction, the leg should be flexed and firmly fixed: extension is then to be made by fixing our apparatus on the metatarsus: the surgeon then grasps the foot, brings his thumbs to bear upon the extremities of the bones, and pushes upon them, so as to assist in their disengagement. As soon as the reduction is accomplished, the part should be rolled, and cold lotions applied, and perfect rest at the part maintained for five or six weeks.

The toes are too well protected to be luxated, except under very extraordinary circumstances; and if it happen, it presents the same characters, and requires similar treatment to that of the fingers.

We must now proceed to consider in succession, wounds of joints, inflammation generally, and particularly as affecting the hip and the knee-joints, and ankylosis and loose cartilages.

WOUNDS OF JOINTS.

Wounds of joints may be contused, incised, or lacerated; may be penetrating or non-penetrating.

So long as the wound does not directly implicate the tissues of the joint, it should be treated much like a wound elsewhere; still, as tissues around a joint do not quickly take on inflammatory action, it often ends in suppuration when they do. The form and mobility of joints oppose difficulties to the proper application of bandages, and there is, therefore, greater probability of the lips of the wound not being kept in apposition.

Penetrating wounds are very serious injuries; ginglymoidal articulations being more superficial than orbicular, are more frequently the seat of these injuries. In many species of occupation, the ankle and knee joint are particularly exposed; among ship-carpenters, who place under their foot the piece of wood they are shaping with the adze, the ankle joint frequently suffers; among vine dressers the knee joint is often wounded. Whatever the joint which has suffered, the danger depends upon the intensity or kind of the inflammation which is developed. This inflammation is sometimes very violent, and reasons for this have not been wanting. The ancients, who were impressed with the great danger of wounding tendons and aponeuroses, were impressed with the idea that the injury to those tissues around a joint completely accounted for the occasional violence of the symptoms. The resistance offered by those tissues, and the violence necessary to overcome it, is another and probably a better reason. The action of atmospheric air upon the tissues of the joint was regarded by Monro, Thomson, Bell, and others, as the sole reasons for the

symptoms. Others have attributed them to the action of air and the contact of the dressing, which, probably, is nearer the truth than any of the others; but it is a matter of question whether air alone can exercise a very deleterious influence upon articular or synovial surfaces in a healthy state. When we amputate at the tarsus, at the knee, the shoulder, or the hip-joint, we do not find such serious symptoms developed; but if we open a joint in which there is an accumulation of synovial or purulent fluid, and maintain the communication, a certain quantity of inflammatory action is certainly developed. The fluid is altered, it is in direct contact with the almost inert surfaces of the cartilage on the one hand, and on the other with the coverings of the joint, which inflame, and acute symptoms are manifested. Certain it is, we may open a joint many times to remove a loose cartilage, without exciting inflammatory action; it is equally certain that when a joint is distended by synovia or pus, we cannot open it with the same impunity. We may perforate the pleura of a healthy animal twenty times, and, probably, pleuritis will not be developed in one, but previously inflame the pleura, in a single case, and when pleuritis is developed, make a similar perforation, and the chances are suffocation will follow in a few hours. I believe, therefore, that the action of atmospheric air is to be feared only when the tissues are already inflamed, or when a fluid which has undergone change is found in the joint.

Symptoms.—The first symptoms of penetrating wounds are often not different from those of ordinary wounds; the wound not being extensive, and the patient being unable to appreciate the importance of the escape of synovia, he uses the limb in fatal security. During the first two or three days there is nothing to alarm; but pass this period, in three, four, or six days after, symptoms are manifested which shew the gravity of the injury: there is itching about the wound, there is stiffness and some tumefaction, the edges are tumid, and a reddish serum escapes in considerable quantity: these symptoms may yield, if arthritis be not developed; but if inflammation set in, the pulse becomes strong, the skin hot, the face injected, the tongue white, with thirst, loss of appetite, and sleeplessness, if the joint be large; if it be small, the symptoms creep on in a more insidious manner, and gradually extend to contiguous structures, and often give rise to numerous abscesses, before attention has been directed to the mischief. Besides these consequences, contused or lacerated wounds of small joints are occasionally followed by tetanic symptoms: this is the general experience of military

surgeons. In the larger joints, when the symptoms of arthritis are set up, the patient keeps his bed, his limb is semi-flexed, the joint tumid, the colour of the skin covering it is often unchanged, though tense and glistening; the pain becomes more acute, increasing in proportion to the intensity of the inflammation, becoming more aggravated as it extends to the ligamentary and fibro-cartilaginous tissues. Often it extends beyond the joint, especially upwards; abscesses are formed so insidiously that until fluctuation is apparent they are often hardly suspected. It is singular, in many cases these abscesses are developed about the middle of the limb, apparently without direct connection with the joint, unless in some cases where the distended capsule has given way. Usually these abscesses are formed in the subcutaneous tissues and muscular interstices, and then the pus burrows with great facility.

Diagnosis.—The diagnosis of these wounds is usually easy; their situation, the tissues divided, the fluid which escapes, and the appearance of the parts, are usually sufficient to lead us to a right conclusion. In punctured wounds difficulties will arise; it is true these difficulties may be removed by the introduction of a probe, but as a probe may cause serious injury, it should not be wantonly used. If the wound be large the edges may be separated, so as to see the cartilages. The escape of synovia is an important circumstance, but it cannot be considered as pathognomonic, because it may follow the wound of a tendinous sheath, the joint itself being uninjured, or it may be so little, or so mixed with other fluids, as not to be recognized; and in a large wound, after twenty-four hours, inflammation would work a great change in its characters.

It is singular how long a tendency there seems to be, apparently from a kind of sympathy, when there is supuration at one point, to repeat a similar action in others, or even in serous sacs: how this happens I cannot tell; I merely record the fact.

Prognosis.—Formerly all wounds of joints were regarded with great apprehension, and unquestionably in most cases they are very serious injuries, but less fatal than our predecessors seemed to think. John Bell and Ledran stated that an opening made into a joint in a state of suppuration was necessarily mortal. If, instead of saying so, they had contented themselves with stating that complete cure was improbable, they would have been nearer the truth; for there would be no difficulty in mentioning a great number of cases of every variety of wounds of joints which have done well; and unquestionably, in many cases of great distention of joints from purulent or other collections, instant relief

may be obtained from a puncture or incision judiciously made. But we must inquire further; what we want to know is, when a joint, such as the knee, suppurates in consequence of a wound, what is likely to happen? I apprehend death almost inevitably, unless the limb be removed, and as a rule even in smaller joints.

The inflammation succeeding to a wound of a joint being the type of the *anatomical changes* produced by these from other causes, I shall here point them out. If the patient die soon after a joint is wounded, the only appreciable alteration is in the fluid contained in the joint; it is turbid, serous, and yellowish. If examined at a later period the internal synovial surface loses its polish; it is rough, and covered by a fibrino-albuminous coating; at a still later period, the synovial membrane may be thickened, the subjacent cellular tissue may be infiltrated, the contained fluid may be puriform, and, at a later period, purulent; the synovial membrane no longer retains the character of a serous tissue, but is more like a mucous surface streaked with blood; the cartilages may be thinned, softened, or destroyed; the ligaments lose their colour and consistency; the bones may be carious.

Treatment.—Inflammation of synovial surfaces being so serious, what should we do to prevent it? If the wound be simple, endeavour to heal it as quickly as possible, taking care that the position is easy, and the rest absolute. When the wound is brought together, some surgeons use bandages moistened with white of egg, to secure the exclusion of air. If the wound be irregular, contused, or lacerated, this may be impracticable, and we must then leave much to nature, arranging the position and apparatus so that the fluids which are secreted may find a ready exit. It may become necessary to moderate inflammatory action at the part; and for this purpose Schmucker thought there was no agent possessed of such efficacy as water. It is said that of sixty soldiers treated in this manner in 1792, at the convent of Cousarrebrouck, only four died, whilst in the French camp, of those similarly wounded, nearly all died. I have no doubt of its value, but I have already, more than once, stated my objections to it. The greater number of surgeons prefer local and general bleeding, with or without cold, with or without emeto-purgatives and rigid diet. Dorsey and Fleury liken synovial to pleural inflammation, and think repeated blistering upon the wound itself, or the point most acutely inflamed, the best mode of treatment. We have not had enough of experience of its results, in acute inflammations of joints,

to speak confidently on the subject, but as far as that experience goes, it is a most valuable agent. In Rust's Magazine is a proposition by Schrager, which consists in applying upon the wound nitric acid "to prevent morbid secretion." He mentions two cases of cure, which I fancy might have got well without it. In cases where the inflammation is not arrested, the tumefaction being considerable, and the pain great, it may be necessary to make warm emollient or narcotic applications to the part. If suppuration supervene, the communication with the exterior not being such as to allow of the escape of the purulent fluid, the fluctuation being evident and the distension distressing, it is proper to make an opening at as many points as collections of pus may be found: this is done to prevent the possibility of altered pus being pent up. It will be necessary to watch carefully the position of the limb, which the patient will always seek to flex, as a position which gives ease; motion should be absolutely prevented, and light warm emollient applications are then most comfortable. If the limb be much infiltrated, light equable bandaging will be proper, and the patient's strength must be kept up against the exhausting effects of suppuration.

ARTHRITIS.

Acute inflammation of joints, other than those produced by wounds, by gout, and rheumatism, we are also called upon to treat. It may be occasioned by blows, fractures, necrosis, sprains, dislocations, or other violence; by foreign bodies in the joints, by the action of cold, and by many other causes, such as gonorrhœa, parturition, or catheterism; but in these cases, when the inflammation is acute, the synovial apparatus is usually affected. The *symptoms* are very similar to those caused by wounds, and therefore it is unnecessary to recapitulate them here. In some cases the disease has been excessively painful, and has ended in gangrene. (Velpeau.)

When it occurs in persons suffering from gonorrhœa it is less painful, but it is sometimes developed with extreme rapidity; it has occasionally been seen in women after the use of astringent vaginal injections; in either case it often disappears quite as suddenly. It may, however, persist, becoming chronic, and ending in white swelling.

As a consequence of child-bearing, this affection is generally not very painful, neither does it light up severe general reaction; it may be developed quite as suddenly as that from gonorrhœa. Though it usually terminates favourably, it may,

like that from gonorrhoea, end in white swelling.

I know of five cases of arthritis following upon catheterism: of these two died, one recovered, but with ankylosis, the other two recovered, but after long suffering. In one, fever was developed after each attempt to introduce a bougie. The means which I have known to succeed best in gonorrhœal arthritis, are, cubebæ in large doses, compression, blisters, and purgatives; after, blood-letting and bathing. In these two varieties, mercurial and opium frictions have succeeded well, together with alterative doses of calomel.

WHITE SWELLING.

When a disease is manifested under a variety of circumstances and forms, it is not less difficult to assign to it a name to which an exact idea may be attached, than to give a general description which may include particular cases; such is the disease familiarly known as *white swelling*. This term has been applied to a particular form of articular inflammation, where the skin more or less perfectly retains its natural colour, and presents no evident external marks of inflammation. Under this term, the idea of chronic or subacute inflammation of joints, without change of colour in the skin, but with sensible tumefaction, is conveyed. The tumor may be hard and resistant, elastic, yielding or fluctuating, with or without effused fluid, sometimes indolent, but often painful, especially when moved. This inflammatory action may affect, at the same time, all, or severally, the tissues of a joint. Now it must be evident to all who have seen these affections that the simple enumeration of the principal symptoms is utterly insufficient to give any exact idea of a disease which presents so many and such varied differences, that scarcely are two patients presented in whom the progress of the disease is exactly similar.

Inflammatory action of joints is generally preceded by pain, varying in character and seat, sometimes limited to a point, sometimes extending to the whole joint, or beyond it; in other cases the affection is developed before any pain is felt. Where the cause is general, the disease is often manifested at night; it is not rare to see a person who went to bed well, awake in the morning with pain in the knee, and sometimes tumefaction. The tumor rarely extends to the whole joint; is almost always limited to a part: at the knee it is usually first perceived above the patella, and on either side of the ligamentum patellæ. This tumor is circumscribed, more or less hard and elastic, not retaining the print of the finger; giving sometimes a

sense of puffiness, at others of fluctuation. It is more or less painful on compression, but it is sometimes indolent; the temperature is not much increased, nor the colour of the skin changed; motion is impaired, and not accomplished without more or less severe pain. The position given to the limb is usually one of flexion, and extension cannot be made without much suffering. This constant flexion of the limb produces a state of fixed contraction in the flexors, and, in a comparatively short time, the joint becomes rigid and immovable. In this condition the joint may remain for some time, may even cease to be painful; but commonly the disease continues its onward course, with occasional exacerbations and remissions; it may, indeed, seem suspended for weeks, or months, and then, from a blow, or even without external cause, it continues its progress. The tumefaction increases, the pain is more severe at some particular point, is worse towards evening, when the temperature is variable, or when the limb is moved; but the extent of suffering is very changeable. The consistency of the tumor varies, generally it is as much greater as it is more advanced, but recent ones are sometimes very hard: this depends much upon the seat of the affection. The skin becomes paler, more glistening and thinner, the subcutaneous veins dilate, the muscles fall away; neighbouring lymphatic glands may be tumefied; the bones, when the disease is advanced, are softened and carious; the articular cartilages are destroyed, abscesses are formed, and are accompanied by much pain and fever; they may communicate with the joint, may open, or be opened externally, and an ill-elaborated sero-purulent, yellowish, whey-like, flocculent fluid, is poured out; sometimes its consistence is more like that of laudable pus, but it soon degenerates into a thin fetid sanious fluid. The escape of this fluid rarely makes any material change in the bulk of the tumor; sometimes the openings at one point are suddenly closed, and almost as soon produced in another; but usually all these openings remain fistulous.

Until the disease arrives at a certain stage, the general health does not materially suffer; then the suffering is occasioned partly by the severity of the pain, preventing sleep, and destroying appetite, and, probably, partly by the absorption of purulent matter into the economy; but it is after the abscess has opened that the general health principally suffers; then there is often developed low fever, night sweats, diarrhoea, and, unless amputation be performed, death.

If we examine the joint after death or

amputation, we see, In some cases, that the disease was primarily external to the joint, but that in its progress it extended to the cartilages and bones; in others that the extremities of the bones were tumid and softened, and that the disease had extended to the ligaments, and the other soft parts, at a later period. In those cases in which the disease has commenced external to the joint, if the limb be examined before the joint itself has suffered, the cellular tissue is infiltrated, spongy, and soft; but the skin may not participate in the disease: in some cases the tissues appear greatly thickened and indurated. In the midst of this mass purulent points may often be seen. At this time the synovial membrane may not have suffered, neither may the quantity of synovia have increased; in some cases, however, it may have increased in the knee joint, so as to press the patella forwards;—I recollect a case where it amounted to twenty ounces.—The bones and cartilages may remain unchanged; but if the disease have proceeded further, the bones may be tumid, yellowish, softened, and easily cut with a scalpel. If still farther advanced, a quantity of sanious matter may be found in the joint; the arthrodial cartilages may be softened or partially destroyed; the bones may be carious, and partially broken down.

In those cases where the bony structure has been principally and primarily affected, wherever we examine the joint we find their spongy extremities tumid, yellowish, softened, and easily cut into. At first, the soft parts are little altered, but at a more advanced period the ligaments and the cellular tissue are infiltrated with a viscous glairy matter. The bone itself is swelled, softened, carious, and here and there reduced into a sanious foetid matter, sometimes without the occurrence of any change in the cartilages.

Characters.—The characters of white swelling are sufficiently marked to enable us to distinguish between it and other diseases of joints; but when such a tumor is presented it is not so easy to determine the cause, which is of much importance in determining the treatment. To a certain extent it is sometimes possible, at an early period of the disease, to determine, not only the cause, but the tissue affected; but the shades of distinction are often very faint. The pain, swelling, and difficulty of movement, are characteristic; *dropsy* of the joint is sufficiently marked by the quantity of effusion, and the absence of pain and inflammation of the soft parts. If the inflammation be external to the joint, the pain is superficial, and motion of the joint does not increase suffering in proportion to the apparent intensity of the disease, and fever is usually absent. When

it is primarily seated in the hard parts, pain is singularly exasperated by any rubbing of the articular surfaces. This symptom coinciding with effusion, and moderate tumefaction, the external tissues still being susceptible of movement, and supporting pressure, enable us usually to affirm that the deep structures are affected. Great heat; prompt re-action; pain and tumefaction comprehending the entire joint; prominent points corresponding to intervals between ligaments, denote primary inflammation of the synovial apparatus. Where the disease occurs during the existence of the sequelæ of a *gonorrhœa*, it may begin with rigors and fever, but it is distinguished by its sudden development, and the bulk, without proportional redness, which it attains. Thus the absence of external violence, joined to those peculiarities, readily induces a suspicion of the cause. When it succeeds to child-bearing its progress is similar to the above, so that at first sight a differential diagnosis is not easily made out. The doughy feel; the apparent bulk of the heads of the bones, compared with the duration of the disease; the obscure fluctuation, and the regular form of the tumor, together with the absence of decided re-action, usually prevent mistake.

Prognosis.—Where the inflammation is external to the joint, and is properly treated, it usually ends favourably: where it is deep seated, but has extended to the joint, it is much less serious than where the inflammation primarily attacks the joint, and affecting a tolerably healthy person will often yield to appropriate means of treatment. That which succeeds to a penetrating wound too commonly ends at best in suppuration and ankylosis: in the other cases we are fortunate if we see discharges lessening and general irritation subsiding, so as to afford a chance of ankylosis, or an opportunity of excision of the joint or amputation of the limb: if this do not happen the patient lingers; new openings are formed; pus burrows above and below the joint; colliquative diarrhœas, with purulent infection, comes on, and death is not distant. That form of disease which commences with the bone or hard parts is generally chronic, but is not on that account, in many cases, less grave, though it leaves amputation as a resource. It is seldom that the gonorrhœal affection does not yield to well directed means; the same may be said of that which succeeds to child bearing. Nothing can exceed the danger of this affection when it arises under the influence of purulent infection; the cases of recovery are then extremely rare.

Treatment.—Over this formidable disease therapeutical agents exhibit little power; still that is no reason why it should be

abandoned. Local and general blood letting are only indicated when there is much pain and local reaction. In taking blood locally, Severinus thought the best plan was to open one or more of the distended varicose subcutaneous veins at the part. Some French surgeons of the present day follow the example, and speak highly of the results; others, such as Gama, apply a large number of leeches on the part. In England we are more disposed to use cupping as a surer means of attaining our object, and lessening the chances of erysipelas. If there be still much pain, it may be relieved in some cases by refrigerants; in others by warm fomentations or poultices. After the more direct antiphlogistics, pressure and counter irritation are often employed. In 1814, Balfour published a number of cases strongly favouring the efficacy of compression, but not sufficiently indicating the cases in which it should be employed. In 1827, Varlez, a Belgian surgeon, published many very painful cases of articular inflammation, in which the benefit derived from compression was very striking. The application of compression must be cautiously made, and this has not been found easy; probably it may be better applied in the shape of a starch bandage than by any other means: in this term Sentin has used it with great advantage. All these practitioners agree in one point, that it should not be used when the bone is principally affected. Refrigerants, emollients, bleeding, and compression failing, blisters have been much used, and, in my experience, with the best success. I think it is wrong to limit their use to purely chronic cases, and to blame so absolutely their employment in acute cases. I have seen the best effects to follow the use of large blisters in acute cases. *Mercurial* frictions have been strongly recommended by Bell and others; but I doubt their efficacy, except in cases of induration of the soft parts; and then probably Grosvenor's plan would succeed as well as mercury. The same may be said of iodine. Issues, moxas, and setons, are often very useful when the disease is deep-seated and indolent. The actual cautery was the remedy *par excellence* of Severinus; it is that of Rust and many others. Its effects vary with the mode of its application. If it be applied to make a large slough, it is less efficacious than caustic. If it be lightly passed over the joint in all directions every third day, the beneficial effects are sometimes very remarkable. Richerand recommended that the joint should be covered by silk plaister, so as to keep up around the part a continual bath. O'Beirn strongly advises that the system should be affected by mercury; and he has published many cases to illustrate the prompt efficacy of this

treatment. He administered calomel to the extent of ten, fifteen, twenty, or twenty-four grains a day, associated with from one to four grains of opium. The cases in which I have seen it used have not inspired me with confidence in its favour: where disorganization has commenced, but the inflammatory action has not ended in structural change, I dare say it may do what many other remedies will do as well.

When suppuration is developed, and the capsule is distended, should we open the joint? That depends on many circumstances. If distension excite great irritation, the course is clear; it must be done. The opening can do nothing worse than what already exists; and sometimes the irritation ceases as if by enchantment. If the reaction be confined to the joint, we should pause. In allowing the air to penetrate, we run the risk of exciting symptoms which we should wish to avoid. If the fluid be not absorbed, and the change of surfaces be manifest, amputation is the resource. Some people, in case of opening, when the joint is distended with pus, recommend that it should be small; such was the opinion of Petit; but the recommendation of David is the one to follow; open at any and every point where there is chance of pus lodging: this is the only means of neutralizing the deleterious effects of atmospheric air.

The different parts which enter into the composition of a joint are more or less intimately united together, so that when one becomes diseased the chances of another suffering are very great. In every joint we distinguish ligaments, synovial membrane, cartilages, and spongy extremities of bones. These different parts may be primarily and separately inflamed, and the disease may afterwards be extended to the others; and these circumstances cannot be viewed with indifference, because inflammation affecting the synovial membrane is different to that which principally affects the ligaments or the more external tissues.

If we admit that any of the tissues of the joint may be separately inflamed, do the symptoms enable us to distinguish the particular tissue affected? In some cases, at an early stage, it is possible; but, in the majority of cases, it cannot be done, because more than one tissue is suffering at the same time. Sir B. Brodie's work on Diseases of the Joints is the ablest in any language, and has done much to simplify the diagnosis, and, to his clear sight, the distinctions may be sufficient; but for you, gentlemen, I fear they will prove insufficient: however, it is my duty to give you the benefit of his great experience.

OBSERVATIONS

ON

THE VARIOLÆ VACCINÆ*.

By ROBERT CEELY, Esq.

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THE *variolæ vaccinæ* seem to have been long known in the Vale of Aylesbury and its neighbourhood. They have been noticed at irregular intervals, most commonly appearing about the beginning or end of spring, and rarely during the height of summer; but I have seen them at all periods from August to May, and the beginning of June. By some it is presumed that cold and moisture favour their development; by others the hard winds of spring, after a wet winter, are supposed to have the same influence. I have, however, seen the disease in the autumn and middle of winter after a dry summer. The disease is occasionally epizootic, or prevalent at the same time in several farms at no great distance, more commonly sporadic or nearly solitary. It may be seen sometimes at several contiguous farms; at other times one or two farms, apparently under like circumstances of soil, situation, &c., amidst the prevailing disease entirely escape its visitation. Many years may elapse before it recurs at a given farm or vicinity, although all the animals may have been changed in the meantime; I have known it to occur twice in five years in a particular vicinity, and at two contiguous farms, while at a third adjoining dairy, in all respects similar in local and other circumstances, it had not been known to exist for forty years. It is sometimes introduced into a dairy by recently purchased cows. I have twice known it so introduced by milch heifers. It is considered that the disease is peculiar to the milch cow,—that it occurs primarily while the animal is in that condition,—and that it is casually propagated to others by the hands of the milkers. But considering the general mildness of the disease, the fact of its being at times in some individuals entirely overlooked, and that its topical severity depends almost wholly on the rude tractions of the milkers, it would perhaps be going too far to assert its invariable and exclusive origin under the circumstances just mentioned; yet I have frequently witnessed the fact that sturks, dry heifers, dry cows, and milch cows milked by other hands, grazing in the same pastures, feeding in the same sheds and in contiguous stalls, remain exempt from the disease. Many intelligent dairymen be-

lieve that it occurs more frequently as a primary disease among milch heifers; but I have not been able to confirm this remark by my own observation. It does not appear to be less frequent on the hills than in the Vale. It has been seen primarily on the stall-fed as well as on the grazing animal.

Origin of the Disease.—I have met with several intelligent dairymen whose relatives had seen good reason to ascribe its occurrence to the contagion of the equine vesicle, communicated by the hands of the attendant of both animals; but very little of that disease has been noticed of late years, though I know of several farriers who have been affected from the horse, and resisted subsequently variolation or vaccination, and have seen a few who distinguish between equine vesicle and the grease, a recurrent disease—eczema impetiginodes—as it appears to me. For many years past, however, the spontaneous origin of the *variolæ vaccinæ* in the cow has not been doubted here. In all the cases that I have noticed I never could discover the probability of any other source.

There is much difficulty in determining with precision, at all times, whether the disease arises primarily in one or more individuals in the same dairy; most commonly, however, it appears to be solitary.

The milkers pretend in general to point out the infecting individual; but as I have more than once detected the disease in a late stage on an animal not suspected of having it, I am not very prone to confide in their representations, unless my own inspection confirms or renders them probable.

In some animals the disease being mild and their tempers good, little notice is taken of tenderness in milking, which is of frequent occurrence; whereas an ill-tempered animal, with not more of the disease, being very troublesome to milk, is sure to be considered the infecting source. Moreover, in the same dairy, at the same time, with the true disease, some one or other of the spurious forms may occur in some individuals, causing difficulty in milking, and producing deep sores on the milkers' fingers, thus complicating the investigation and deceiving the indiscriminating milkers. The very frequent occurrence of inflamed, tender, and chapped nipples, in connexion with the time and mode of milking in closely arranged stalls, and in comparative darkness, renders these men in general unsuspicious of any specific disease till it has made pretty extensive progress through the shed. Their general incompetency to distinguish between the true and the false eruptive diseases, added to the above disadvantages, often creates insuperable difficulties in obtaining very important information, and frequently

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precludes implicit reliance on it when obtained. Hence another source of the numerous inherent difficulties which attend these investigations, and hence the cause of late intelligence precluding successful inquiries, and not unfrequently the loss of all knowledge of the fact of the existence of the disease; hence also the multitude of vexations, perplexities, and disappointments, which too often await the inquirer after facts, and the searcher after lymph. For the acquisition of a very moderate amount of real knowledge on this subject, much time and many sacrifices are required, since actual personal observation is indispensable; and even then it is only after extreme vigilance, quickened by repeated disappointments, with much inconvenience and considerable labour, that some of the objects sought can be obtained. The remote causes appear to be entirely unknown.

Condition of the animal primarily affected.—Here, again, the difficulties above mentioned often thwart inquiry, and the preliminary signs of the disorder are rarely noticed. Yet it must be admitted that this fact, though negative, justifies the presumption of the absence, in many instances at least, of any appreciable or very notable constitutional derangement. In the majority of instances I could not learn that food was refused, or any palpable febrile indications were noticed. In August, 1838, three cows were affected with the disease: the first was attacked two months after calving, and seven weeks after weaning. This animal was considered in good health, but to me appeared out of condition; it had heat and tenderness of teats and udder, as the first noted signs. The other two were affected in about ten days. In December, 1838, in a large dairy, a milch cow sired her calf, had heat and induration of the udder and teats, with vaccine eruption, and subsequent leucorrhœa and greatly impaired health; the whole of the dairy, consisting of forty cows, became subsequently affected, and some of the milkers. In another dairy, at the same time, it first appeared in a heifer soon after weaning, in about ten or twelve days extended to five other heifers and one cow milked in the same shed, affecting the milkers. In another dairy, at the same time, thirty cows were severely affected, and also one of the milkers. It appeared to arise in a cow two months after calving. The only symptoms noticed were that the udder and teats were tumid, tender, and hot, just before the disease appeared.

Condition of the animals casually affected.—There is rarely any manifestation of fever or constitutional disturbance. In some seasons it appears milder than at other seasons. In some animals it is less severe

than in others, depending on the state and condition of the skin of the parts affected, and the constitution of the animal. It is sometimes observed to diminish the secretion of milk, and in most cases commonly does actually affect the amount artificially obtained, beyond which, and the temporary trouble, plague, and accidents to the milk and milkers, little else is observed: the animal continues to feed and graze, apparently as well as before.

The topical effects vary much in different individuals, whether primarily or secondarily affected, the mildness or severity being greatly influenced by the temperament and condition of the animal, and especially by the state of the teats and udder, and the texture and vascularity of the skin of the parts affected. Where the udder is short, compact, and hairy, and the skin of the teats thick, smooth, tense, and entire, or scarcely at all cracked, chapped, or fissured, the animal may and often does escape with a mild affection, sometimes only a single vesicle. But where the udder is voluminous, flabby, pendulous, and naked, and the teats long and loose, and the skin corrugated, thin, fissured, rough, and unequal, then the animal scarcely ever escapes a copious eruption. Hence, in general, heifers suffer least and cows most from the milkers' vaccinations and manipulations. Dark red and red-spotted animals are often seen more affected than those of a lighter colour, as might be expected, from the occurrence in them of the respective conditions above mentioned.

Progress of the disease.—The variolæ vaccinæ once arising or introduced, and the necessary precaution not being adopted in time, appear in ten or twelve days on many more in succession, so that amongst twenty-five cows, perhaps by the third week nearly all may be affected; but five or six weeks or more are required to see the whole number perfectly free from the disease on the teats at least.

The facility with which the disease may be and often is propagated by the milkers is very remarkable. In December 1838, on a large dairy farm where there were three milking sheds, the variolæ vaccinæ first appeared in the home or lower shed. The cows in this shed being troublesome, the milker from the upper shed, after milking his own cows, came to assist in this for several days, morning and evening, when in about a week some of his own cows began to exhibit the disease. It appears that having chapped hands, he neglected washing them for three or four days at a time, and thus seemed to convey the disease from one shed to another. During the progress of the disease through this shed, one of the affected cows, which had been assailed by its fellows, was removed to the middle shed, where all the animals were per-

fectly well. This cow being in an advanced stage of the disease, and of course difficult to milk, and dangerous to the milk pail, was milked first in order by the juvenile milker, for three or four days only, when, becoming unmanageable by him, its former milker was called in to attend exclusively to it. In less than a week all the animals in this shed showed symptoms of the disease, though in a much milder degree than it had appeared in the other sheds, fewer manipulations having been performed by an infected hand.

The progress of the disease, however, is not always so readily or so satisfactorily traced; and I have felt induced to think sometimes that more than one animal has had the natural form in different parts of the same dairy. Nor is the disease necessarily communicated to all the animals milked by the same hand: not only do some older animals escape, but I have seen several times young milch heifers, exposed to all the circumstances favouring contagion amidst the rest of the herd, entirely escape.

Typical symptoms of the natural disease.—For these we are almost always, in the early stage, by reason of the circumstances above mentioned, compelled to depend on the observation and statements of the milkers. They state that for three or four days, without any apparent indisposition, they notice heat and tenderness of the teats and udder, which are followed by irregularity and pimply hardness of these parts, especially about the bases of the teats and adjoining vicinity of the udder; that these pimples, on skins not very dark, are of a red colour, and generally as large as a vetch or a pea, and quite hard; that in three or four days many of these having increased to the size of a horse bean, milking is generally very painful to the animal, the tumors rapidly increase in size and tenderness, and some appear to run into vesications on the teats, and are soon broken by their hands; milking now becomes a troublesome and occasionally a dangerous process. It is very seldom that any person competent to judge of the nature of the ailment has access to the animal before the appearance of the disease on others of the herd, when the cow first affected presents on the teats, acuminated, oval, or globular vesications, some entire, others broken, not unfrequently two or three confluent. Those broken have evidently a central depression with marginal induration; those entire, being punctured, effuse a more or less viscid amber-coloured fluid, collapse, and at once indicate the same kind of central and marginal character. They appear of various sizes, from that of a pin's head, evidently of later date, either acuminated or depressed,

to that of an almond, or a filbert, or even larger: dark brown or black, solid, uniform crusts, especially on the udder, near the base of the teats, are visible at the same time; some, much larger, are observed on the teats; these, however, are less regular in form, and less perfect: some are nearly detached, others quite removed, exhibiting a raw surface, with a slight central slough. The forms of the crusts on the udder are either circular or ovoid, slightly acuminated or depressed, and the crusts seem imbedded in or surrounded with more or less indurated integument. On the teats the crusts are circular, oval, oblong, or irregular; some flatter, others elevated and unguiform, several irregular; some thin and more translucent, being obviously secondary. The appearance of the disease in different stages, or at least the formation of a few vesicles at different periods, seems very evident. The swollen, raw, and encrusted teats seem to produce uneasiness to the animal only while subjected to the tractions of the milkers, which it would appear are often nearly as effective as usual.

Most commonly, however, the observer, instead of seeing the above phenomena, does not arrive at the dairy until the cicatrices are nearly healed on the animal first affected, when he commonly finds the greater part of the animals in the same house in different stages of the disease. When he is fortunate enough to have an opportunity of watching the disease in its progress through the different parts of a dairy, and can carefully and diligently inspect all the animals in succession, he may observe the

Typical symptoms of the casual Variolæ Vaccinæ.—It is very rarely that any indications of contagion, after undoubted exposure, are manifested before the sixth or seventh, sometimes not till the eighth or ninth day; but a vigilant observation of thin-skinned animals, with chaps and cracks on the teats, will exhibit small red, rather tender papulæ near the udder and on the body of the teats, about the fifth day. On the sixth and seventh day, in cows with white clear skins, on the lower parts of the udder are observed circumscribed indurations, generally of a reddish colour, and of a circular, ovoid, or lozenge shape, as large as a vetch or a pea; a few are still larger, six lines or more in diameter, and have a central depression very palpable to the finger, in which is visible a small, dirty, yellowish white discolouration, surrounding a still darker dot or line, sometimes angular, thus: — ◁; these indurations are often interspersed with minute red papulæ of a darker colour, rather acuminated, often with abraded summits. Some of the tumors contain within their centres

a slender amber-coloured, yellowish brown or brownish black crust, these being less tumid and prominent than those without the crusts; they are all very tender, even when slightly compressed. On the teats, especially on the lax and extensile skin of their base, similar tumors are observed, often in considerable numbers, generally circular, about the size of a vetch or a pea, some even smaller; on the bodies, and even to the apices of the teats, they are also numerous, and frequently ovoid, from ten to fifty or more. On all these parts of the teats the circumscribed intumescence and induration is less apparent and less defined than on the udder; but the pearly or glistening lustre of their margin and part of their centre is nearly as manifest. In animals with dark skins, at this period, the finger detects the intumescent indurations often better than the eye; but when closely examined, the tumors present at their margins and towards their centre a glistening metallic lustre or leaden hue; but this is not always the case, for occasionally they exhibit a yellowish or yellowish white appearance. Those in which a central crust has formed are readily detected, and on others which have been compressed, or had the cuticle abraded, there appears a crystalline amber-coloured translucent mass of concrete lymph on the surface, sides, and vicinity, leading to the detection of what might otherwise have been overlooked. On the eighth and ninth days, in animals with fair skins, on the udder, some of the tumors appear with more central depression, and more elevation of the margin, which is solid, uniform, tense, and shining, extending to seven or eight lines, of a glistening white, pearly, or silvery hue, and in the centre of many is observed a blueish or slate-coloured tint. Around the base is often apparent a narrow pale rose or light damask areola, not more than a line or two in width. In others the central crust is increased, and is yellow, brown, or black; a few appear a little pustular in their centres. On the teats corresponding changes have taken place in the tumors which remain entire; a few small conoidal vesicles also appear to have subsequently risen; some have a slight depression on the apex; they may be found from the size of a pin's head to that of a pea. But generally, the majority of the tumors are more or less abraded or otherwise injured, either by the animal while recumbent, or by the merciless manipulations of the milkers; hence is seen lymph exuding from the centres, with cuticle loose or partially detached, raw surfaces, brown or black crusts, either primary or secondary, and here and there the cuticle entirely raised from the centre of the tumor, forming a vesicle of a conoidal shape, often slightly depressed at its apex,

with a dark central spot, and distended with pellucid lymph, around which there is generally some appreciable intumescence and induration. Many tumors are found coalescent, and several vesicles interfluent. In very dark-skinned animals, instead of a blueish tint of the centre of the tumors, a leaden coloured or metallic glistening hue is apparent there and over the intumescent margin. In those less dark, with thin skins, a yellowish or dirty yellowish white, sometimes pustular appearance, is observed in the centre and on the margin, and instead of a well defined surrounding areola there is in some perhaps a reddish brown or tawny hue; but in all, heat and circumscribed induration, especially where the skin is thick, corresponding to the limit of the areola in others.

Between the tenth and eleventh days the disease in general reaches the acmé. On the udders the tumors are often from eight or ten lines in their largest diameter, and in white skins the centres and central edges of the intumescent margin are of a deeper blue or slate colour, and the areola, which is usually of a pale rose colour, is seldom more than 4 or 5 lines in extent, under which the integuments are deeply indurated. Lymph, which two days before was difficult to procure from beneath the cuticle of the central depression of some tumors, is now so copious that it raises the cuticle, forming a globular or conoidal vesicle, or freely flows out from its rupture. Other tumors have a greatly extended brown or black central crust, either slightly acuminate or depressed, encroaching on the marginal intumescence; others have become flatter, entirely encrusted, and perfectly passive. On the teats, the few which remain unbroken undergo similar changes, but appear to have less extent of areola, and less circumferential induration; the skin here being loose and extensile, the coalescent tumors are more or less abraded, and have primary brown or secondary black crusts, or a combination of both; the interfluent vesicles are more or less covered with brown or black, oblong, irregular, solid or unguiform, strong, compact crusts, or, denuded of cuticle, are raw, swollen, with elevated margins, discharging blood, lymph, and pus. On and after the twelfth day, on the udder nearly all is passive; the central brown or black crusts have rapidly increased, the marginal induration and intumescence proportionately subsided; the few remaining unbroken vesicles gradually acquire a brown or blackish hue, shrink, and desiccate within their subsiding induration. The central crusts above alluded to, if undisturbed, though they may become thicker and darker and more compact, seldom increase in breadth after the thirteenth or fourteenth day. The marginal indurations within which the

central and vesicular crusts are always enclosed, though they now and then, for a day or two, seem irregularly to renew their former elevation, gradually subside, and have nearly disappeared on the spontaneous separation of the crusts, which takes place on the twentieth or twenty-third day; but even then some traces of induration are left surrounding the cicatrix or pit, which is shallow, smooth, oval, or circular, of a pale rose, white, or whitish colour, according to the contrast of the surrounding pigment.

On the teats about this period—the twelfth day and onwards—around their base, the tumors and vesicles which are left entire exhibit the like appearance; central crusts of various sizes, brown or black, imbedded in less indurated marginal elevations; vesicles in various degrees of advancement towards desiccation; some with flaccid, flattened cuticle of the colour of the surrounding pigment; others, more advanced, with yellowish light brown, and others desiccated into dark brown and blackish, slightly acuminate or centrally depressed, oval, or circular uniform compact crusts. On other parts of the teats, out of the way of the milkers, and where the tumors or vesicles have been small, few, or solitary, the same may be observed; but most commonly, and always where these have been large, numerous, and coalescent or interfluent, the skin thin, loose, and vascular, and the animal inordinately irritable, a very different state of things is observed. Large black solid crusts, often more than an inch or two in length, are to be seen in different parts of these organs; some firmly adherent to a hard and elevated base; others partially detached from a raw, red, and bleeding surface; many denuded, florid red, ulcerated surfaces, with small central sloughs, secreting pus and exuding blood; the teats excessively tender, hot, and swollen. Not unfrequently one or more teats form a tumid mass of black crusts and naked red sores, secreting a discharge which imparts to the finger that touches it an odour strongly resembling that which emanates from a patient in the last stage of small pox. In some animals, under some circumstances, this state continues little altered till the third or fourth week, rendering the process of milking painful to the animal, and difficult and dangerous to the milker. In many, however, little uneasiness seems to exist: the parts gradually heal; the crusts, though often partially or entirely renewed and renewed, ultimately separate, leaving apparently but few deep, irregular cicatrices, some communicating with the tubuli lactiferi, the greater part being regular, smoothly depressed, circular, or oval. Occasionally warty or fungous growths succeed some of

the deeper ulcerations. It not unfrequently happens that the central deeper part of the depressed cicatrix, even when not very large, continues to remain a thin flimsy irregular incrustation, (secondary or tertiary,) as late as the end of the fifth week, or even longer.

[To be concluded in our next.]

EXCISION OF THE ELBOW-JOINT.

To the Editor of the Medical Gazette.

SIR,

THE ease of which I now forward a statement occurred some time ago, but as it is one the ultimate condition of which time only could declare, I have deferred giving an account of it, till I should have an opportunity of ascertaining the result of the operation, after the lapse of a sufficient period.

This opportunity having been afforded within the last few days, I am enabled to request insertion of the following history in the pages of your valuable journal.—I am, sir,

Your obedient servant,
GEORGE BUSK.

Dreadnought, July 14th, 1840.

JAMES LEWIS, æt. 25, was admitted into the Seamen's Hospital, September 7, 1837, with disease of the right elbow-joint. The joint was painful and much swelled, and its motion very limited. The swelling was principally on the sides of the olecranon and about the head of the radius. There was distinct fluctuation in that part of the swelling situated between the olecranon and head of the radius, and in this situation there was considerable tenderness. Any motion of the joint, and especially rotation of the hand, caused great pain, but no roughness attended the motion. The muscles of the arm were much wasted; the general health good. The history of the case was this:—In June 1833, the man was a patient in the hospital with abscess in one testicle, and periorchitis in the tibiæ, connected with syphilis. In July 1834 he was again admitted with an affection of the right elbow, which had commenced shortly after his previous discharge. The arm had been more or less affected ever since, but had not been so bad as to prevent him following his employment until the last three months. For some time previous

to his admission he had attended as an out-patient, and the usual applications had been resorted to without benefit. After his admission an issue was made in the neighbourhood of the joint, which was confined in pasteboard, and he took the hydriodate of potass: by these means the pain of the elbow was much relieved in eight or nine days, but he complained much of pain referred to the lower part of the radius. A grooved needle introduced into the fluctuating part of the swelling gave exit to some transparent fluid.

He continued to improve till about the end of the month, when he left the hospital.

He returned on the 31st of October. Since his discharge, he had been drinking, and living a very irregular life. He was very weak, and had a bad cough; slept ill, and vomited almost every thing he took. Pulse 120, sharp. The arm had become much wasted, which caused the elbow to appear large, although it was in fact but little swelled; there was only a soft puffiness on the sides of the olecranon. There was great tenderness over the radio-humeral articulation, and on the inner side of ulna. Flexion of the joint caused pain in both sides of it, but the most forcible attempts at extension did not cause any, unless the limb was jerked. When the limb was held so as to allow the forearm to hang inwards, great pain was felt on the inner side, and when the limb was bent outwards, the pain was felt in the radio-humeral articulation.

Rotation of the hand caused great pain in the elbow, and all down the arm.

There was no affection of any other joint. In the beginning of November his health was slightly improved, but there was no appearance of amendment in the elbow, and it did not seem probable that any would take place. There was evidently extensive ulceration of the articular cartilages, and probably caries of the bones. The parts surrounding the articulation were, however, in healthy condition, and the ligaments perfect. As the constitution was evidently affected by the local disease, its removal became a question of necessity. Under these circumstances the case appeared one well adapted for excision of the joint, and this proceeding was consequently determined upon, and carried into effect on the 12th of November, 1837,

in the following manner. An incision was made, on the posterior aspect of the arm, near its inner border, and immediately external to the course of the ulnar nerves. This incision was commenced about three inches above the articulation, and carried about two inches below it. A transverse incision was then made immediately above the olecranon, dividing the triceps, &c. down to the bone. The ulnar nerve was reflected over the inner condyloid protuberance. The angular flaps formed by the incisions were then reflected, and the lateral ligament of the elbow divided, the capsule of the joint opened, and the olecranon removed with the cutting forceps. An ivory paper knife was passed in front of the articular head of the humerus, and the whole of the articular surfaces removed with a saw. The coronoid process of the ulna was found to be carious, and the articular cartilages of the ulna and radius extensively ulcerated.

It was necessary to make another incision at right angles with the outer extremity of the former transverse one, downwards, over the head of the radius, to allow of the application of the cutting forceps to the neck of that bone, by which the whole of its head was removed with the saw. When the olecranon was removed with the forceps, its cancellated structure was observed to be filled with pus, but at the part at which the bone was afterwards sawed its texture was quite healthy.

The sharp projecting point of the inner condyloid protuberance was nipped off. A few small vessels were tied, and both ends of the ligature cut off—a measure I afterwards much regretted, as the knots became the cause of sinuses, which were open for some time, till the remains of the ligatures came away. The flaps of integument were brought together with sutures, and the wound covered with lint dipped in cold water, no plaster being used. The arm was placed in an easy posture on a curved splint.

The disease consisted in a gelatinous alteration of the articular cartilages of the humerus, and partial caries of that bone. Nearly the whole of the sigmoid cavity of the ulna was denuded of cartilage, and that bone extensively carious, and its cancellated structure filled with pus. The cartilage on the articular head of the radius extensively ulcerated,

and the bone superficially carious. The ligaments were barely distinguishable in the gelatinous looking-matter into which the capsule of the joint was converted. There was a small abscess external to the joint, immediately in front of the coronoid process of the ulna.

It is needless to record the daily reports: suffice it to say, that on the 16th, or four days after the operation, complete adhesion of the external wound had taken place, and the edges required separating a little at the lower angle, to allow of the escape of a small quantity of pus. He had suffered no pain since the operation. On the 18th he had an attack of severe pain in the side of the chest, which was considered to be pleurisy, and was removed by bleeding and leeching.

The arm went on very favourably, and on the 24th the limb was fixed on a splint, curved to an obtuse angle, and he was allowed to get up. By this time there was hardly any discharge, the wound being perfectly united throughout, except at the lower angle.

On the 3d of December, tin splints, having a joint at the elbow, were applied on the sides of the arm. These splints allowed of flexion and extension, but prevented lateral motion, and with them applied passive motion was frequently employed, which did not cause pain. On the 18th December he was able to write a letter.

In the middle of January the splints were left off, and he had considerable use of the arm. His general health was quite restored, and he was discharged from the hospital on the 1st of February. The last knots of the ligature did not come away till May or June, when the small sinuses which had been kept up by their presence finally closed. In June he had an attack of small-pox, on his recovery from which I saw him, when he had limited motion of the false joint, but it was very weak. He had, however, full power of supination and pronation of the hand, and was able to carry a pailful of water, with the arm extended.

About a year after the operation he returned to his employment as a seaman, and had very much recovered the use of his arm.

He presented himself to me on the 6th of this month, when I had an opportunity of fully examining the condition of the limb. Before removing his clothes

it required close observation to detect any difference between the limbs, and he stated that no one on board the vessel of which he had been mate for nearly twelve months was aware that he had anything the matter with his arm. On baring the arms, however, there was considerable difference in their size, although the muscles of the right had much increased since I had seen him last. The affected arm was altogether smaller than the other, but was not otherwise at all deformed. The shape of the elbow was so little altered that any one not aware of the fact would hardly have been able to convince himself that the articulation had been removed. The arm could not be flexed to more than a right angle, but could be perfectly extended. There was no lateral motion. The motions of supination and pronation of the hand were perfect. He had no pain, and found only that the right arm was not as strong as the left. He had become very stout, and appeared to enjoy the most robust health.

CASES OF SQUINTING.

To the Editor of the Medical Gazette.

SIR,

CASES of squinting cured by division of the internal rectus muscle have hitherto only been reported: as I have now had a few cases under my treatment where this proceeding proved insufficient, I beg to forward them to you for insertion in your valuable journal.

I remain, sir,

Your obedient servant,

A. FRANZ, M.D.

19, Golden Square, July, 14, 1840.

CASE I. — Eliza White, aged 29, a girl of weak constitution, with dark eyes, affected with squinting since her 6th year, which she had acquired by imitation, presented herself for operation on June 22d. On examination I found the left eye to be inverted and turned upwards, so that nearly one-half of the cornea was hidden by the inner canthus; that she could not turn the left eye outwards beyond the orbital axis; and that on closing the right eye she could only read very large print. I proceeded to the operation, and carefully and entirely divided the internal rectus muscle, as in all my former cases. I now removed the hook

from the conjunctiva, and, leaving the eye a little at rest, after the lapse of a few minutes I examined its state again, when I was not a little surprised to find that the division of the muscle had not proved efficient; for although the inversion was certainly modified, the eye was yet turned considerably upwards and slightly inwards. From the direction in which the eye now stood when at rest, and its movements obliquely upwards towards the glabella, I was induced to think that the present state of this eye, the internal rectus having been entirely divided, would be well adapted for an experiment to investigate the true action of the oblique muscles; and as the patient bore the operation with very little inconvenience to herself, I determined at once to divide first the superior oblique, in order to convince myself whether the present direction of the pupil depended actually on the action of the inferior oblique only, and then to divide the inferior oblique likewise, if the direction of the pupil should require it*.

I passed the hook again through the conjunctiva for drawing the eye outwards, and without enlarging the wound in the conjunctiva passed the curved scissors under this membrane, cutting through the adipose and cellular tissues with the blades of the scissors, so directed as to meet the tendon of the superior oblique, which I soon distinctly felt between the blades, and divided, as was proved by the resistance, and the peculiar sound with which the division of a tendon is accompanied. On removing the hook again from the conjunc-

tiva, and carefully examining the eye, I was not a little surprised to find that it was now perfectly straight, the pupil occupying its proper position. The division of the inferior oblique was therefore not requisite. The patient could not move the eye inwards, but in all other directions the movements were free. She was now dismissed, with directions for the after treatment, as in the former cases. No signs of inflammation made their appearance, and the case has proceeded favourably.

On the 11th of this month I saw her for the last time, when the wound was perfectly healed, and presented a smooth surface, and, with the exception of a slight redness in the inner angle of the eye, no trace of the operation was discernible: the pupil occupied the proper position, the movements of the eye operated upon were free and regular, and in perfect harmony with the motions of the other eye.

CASE II.—A young gentleman from Somersetshire, aged 17, in the enjoyment of good health, affected with congenital squinting of the left eye, arrived in London on June 29th, accompanied by his medical attendant, Dr. Cardew, of Weymouth, who placed him under my care for the treatment of this deformity. On examination I found the left eye turned considerably inwards and upwards, so that one-third of the cornea was concealed by the inner angle and the upper lid of the eye; that he could turn the left eye outwards to some distance beyond the orbital axis, but that he could not read print of a moderate size. I fixed the operation for the day following, when it was performed in the presence of Dr. Cardew. On removing the hook from the conjunctiva, after a perfect division of the internal rectus muscle, the eye, as in the former case, was yet drawn obliquely upwards towards the glabella. I therefore proceeded, with the concurrence of Dr. Cardew, to divide the superior oblique muscle, as above. After completing the operation, the eye occupied its proper position; its motions were free, except internally, and sufficed to bring the edges of the wound in the conjunctiva, which was very small, in contact. The same after-treatment was pursued; no inflammation followed; and on the 9th of this month he left town, perfectly cured: no trace of squinting could be detected,

* The physiology of the muscles of the eye has been certainly rendered far more clear by the observations "On the Muscles of the Eye," made by Sir Charles Bell in the *Philosophical Transactions*, 1823, but yet much remains to be said upon the functions of the oblique muscles, since a great diversity of opinion still exists amongst anatomists and physiologists in this respect. The inferior oblique muscle passes under and round the eyeball, to be inserted into the sclerotica posteriorly, and beyond the greatest diameter of the globe. We may therefore infer that its action would be to turn the eyeball so as to give the pupil a direction upwards and slightly inwards. From the peculiar arrangement of the superior oblique, and from its attachment to the sclerotica beneath the superior rectus, without passing over the greatest diameter of the globe, I am inclined to attribute to it the action of carrying the pupil inwards and slightly upwards, and thus to assist the inferior in a movement which is one of the most frequent of all motions of the eyes, as it occurs at every closure of the eye in the act of winking, during sleep, and as a diagnostic in the expression of the eye during various healthy and morbid conditions of both body and mind.

and both eyes moved harmoniously, the redness of the conjunctiva in the inner angle being confined to a space of about a quarter of an inch in extent.

On the 2d of July I have a third time divided these two muscles, in the case of a young gentleman from Birmingham, aged 9 years, in whom both eyes were affected with squinting to a great extent; but the description of this case, as it presents other peculiarities, I will defer until I have performed the operation on the other eye, which will take place in a few weeks.

In my latter cases I have somewhat altered the mode of operation, by which I am enabled to perform it with greater facility and ease both to myself and the patient. I use now but one retractor for the upper eyelid, and having fixed the eye, by means of the hook furnished with a sliding yard passed through the conjunctiva, I grasp the valvula semilunaris with a pair of fine forceps armed with teeth at their extremities, and drawing out a horizontal fold of the conjunctiva, between the hook and forceps, divide it with a pair of scissors, when the tendon of the rectus muscle is immediately brought into view, and the operation is completed in the manner formerly described.

In a letter, dated June the 9th, lately received by me from Professor Dieffenbach, he mentions an inveterate case of squinting, combined with amaurosis, where both affections were removed by the division of the internal rectus muscle, of which case he will give me a full account at a further period, which I shall then make known to the profession. He also further states that he has now performed this operation in 250 cases.

CASE OF SCROTAL HERNIA,

WITH EXTENSIVE ULCERATION AND PERFORATION OF THE INTESTINES.

To the Editor of the Medical Gazette.

SIR,

On the 18th of June, 1840, I was called upon to visit Mr. G —, a seaman, of a stout athletic habit of body, aged thirty-four. For more than twenty years he described himself as having been the subject of scrotal hernia, and which, from never having worn a truss, had acquired

a considerable size. On my arrival, I discovered that an increased portion of gut had descended, which, after a few hours, was replaced in its natural position. There was great distention of the abdominal parietes, of a tympanitic character. A diarrhoea had existed the previous day, but had ceased when I first saw him. He now complained of constant inclination to reject his food, a symptom to which he had been, more or less, accustomed for many years, and the slightest pressure on the left hypochondriac region would at all times enable him to vomit with ease. He had a full pulse, about 100 in a minute; firm pressure might be made over the whole of the abdomen, without producing the slightest pain; very little inconvenience was also experienced from effecting the return of the increased portion of intestine. The gastric irritation not being a new feature, I endeavoured to empty the bowels by castor oil, to remove the offending matter which had given rise to the diarrhoea, and attempted to allay the irritation of the stomach, by the use of effervescing salines, followed by the application of a blister, which remedies afforded considerable relief. A week elapsed from the time of my first visit without there being any alvine discharges, excepting a small quantity of mucus, although in the interim I had ordered a frequent repetition of enemata, together with active purgatives. At the expiration of this period, copious liquid discharges, with an abundant supply of bile, took place, followed by a considerable discharge of mucus. After the lapse of two or three days, the feculent discharges were again suspended; the gastric irritation and tympanitic symptoms now became more urgent, and on Saturday, July 4th, the attendance of Dr Symes was requested. At his suggestion, I abstracted twelve ounces of blood, the pulse continuing rapid, though with less force than at the commencement of the attack. The countenance at this time indicated great anxiety. The blood was neither bled nor cupped, nor was any relief obtained from the operation. A dose of calomel and opium at bed-time procured some hours of refreshing sleep: the following day, however, there was great increase of restlessness, and an anxiety of countenance, approaching to the facies hippocratica, was still more visible. From this period it would be needless to detail

the daily symptoms which continued unaltered (and wholly unrelieved by a variety of medicines,) till within a few hours of his death, when there supervened the most excruciating pain over the whole of the abdominal cavity. He expired on the night of the 8th inst.

Sectio cadaveris sixteen hours after death.—I began the dissection of the parts, as in the operation for strangulated hernia, and on opening the sac the first thing that presented itself was a portion of omentum, and behind it the sigmoid flexure of the colon, but no other portion of the intestine. No adhesions whatever were discovered in any part relating to the hernia, nor had there ever been any strangulation, which was proved by the finger being easily introduced between the intestine and the pillars of the abdominal ring. Farther dissection proved the hernia to have been congenital. The calibre of the bowel, as it emerged from the ring, was considerably diminished (the result of chronic inflammation), thereby obstructing the passage of any solid feculent matter; and (as was shewn by the subsequent dissection) in the portion of colon, above this contraction, were lodged several pounds weight of solid feces. On opening the abdomen, there was an abundant discharge of fœtid gas, and a sudden subsidence of the tympanitic swelling; and on farther reflecting the abdominal parietes, great displacement of the viscera immediately presented itself. The arch of the colon ran parallel with the descending branch of that intestine, and the cardiac extremity of the stomach lay in the left hypochondriac region. A small aperture was seen at the bottom of the descending colon, on which were lodged minute portions of feces; two large openings were also seen at the upper part of the descending colon, through which considerable quantities of feculent matter had escaped. The mucous membrane of the stomach, towards its cardiac extremity, was of a dark red colour: there was no other appearance of disease, either in the stomach itself, or at its pyloric orifice. The mucous surfaces of the duodenum and jejunum, and the two upper thirds of the ileum, presented no unusual appearance, but about the lower third of the latter increased vascularity and minute ulcers began to make their appearance, and these ulcers increased in size and frequency as we approached the colon (the ileo-colic

valve, however, remaining unaltered). The whole of the colon presented externally a livid appearance; internally, an almost uninterrupted surface of ulceration, more abundant immediately above the contracted part of the gut. These ulcers varied both in depth and size; two (as before described) had completely perforated the peritoneal coat, by openings nearly an inch in diameter; others had destroyed the mucous and muscular coats, leaving the peritoneum entire. The liver was considerably increased in size; the convex portion of the right lobe was of a purple hue, and most of this viscus much softened.

The post-mortem examination contained nothing farther worth relating.

Should this lengthened account appear sufficiently interesting for the pages of your valuable journal, I should be much obliged by your inserting it.

I remain, sir,

Your obedient servant,
JAMES SOUTHCOMB.

Bridport, July 13th, 1840.

DETACHED ABDOMINAL TUMOR.

To the Editor of the Medical Gazette

SIR,

YOUR number for June 5th, under the head of Medical and Chirurgical Society, contains a short description, by Mr. C. Hawkins, of a detached cartilaginous tumor found by him in the peritoneal cavity. In the number for June 19th, Mr. Douglas has published a letter, in which he agrees with Mr. Hawkins in his opinion as to the origin of the said tumor, and in which he mentions a few instances of similar excrescences growing from the cavity of the knee-joint and tunica vaginalis testis. No rational doubt can exist as to the origin of these tumors; and my only object in now addressing you is, to send you a short account of the discovery of a specimen similar to that of Mr. Hawkins. In the spring and summer of 1833, I attended William Green, a labouring man, aged about 50; he had been affected for a long time before with disease of the abdominal viscera, but had made no regular application for medical advice. It was clear at this time that, in addition to the abdominal disease, the heart had become extensively hypertrophied: as so often happens, in

similar cases, his death occurred suddenly, and a ready consent was given to my proposal of examining the body. The following is a pretty correct general account of the post-mortem appearances. The stomach was not much altered in structure; the intestines showed marks of chronic inflammation; there was great thickening of the peritoneum, without much serous effusion; the liver was enlarged, but presented no other morbid change; the heart was much hypertrophied, but the lungs were tolerably healthy. As I intended to detach the whole intestinal mass, for a more detailed examination, it was lifted up by one of the persons who assisted me, in order to pass a thread round the junction of the colon and rectum; and I then saw lying loose in the hypogastric region a substance which at first sight appeared like a piece of white wax; when taken up and examined, it was clearly a tumor, which had at some former time grown from the peritoneal surface, and had been detached. It was nearly triangular, about the size of a large walnut, and had a kind of a footstalk, which showed marks of having been abruptly broken, and from which it must have hung pendulous from the peritoneum. This discovery led me to conjecture that the man might have suffered, at some time, from a blow, or other external violence, and I questioned the widow minutely as to her recollection of any such occurrence: she said that two or three years before her husband had given himself a violent twist during some unusual exertion, and had complained of great pain in the abdomen for some time; in fact, his health, which was uniformly good before, had been more or less deranged ever since. I think there can hardly exist a difference of opinion as to the connection between the presence of this foreign body in the peritoneal cavity and the progressive and ultimately fatal disease of the abdominal and thoracic viscera. Being then in the habit of frequently seeing Mr. Stanley, I showed him the tumor, and he at once concurred in my opinion of its origin. At his desire I divided it into two equal parts with a very strong scalpel, and found that the outer two-thirds consisted of cartilage, and the inner one-third of osseous deposit. The only book on morbid anatomy to which I have ready access is that of Dr. Baillie; but the following extract from his work, relative

to the size of similar tumors discovered by him, will show the value, in a pathological sense, of this specimen and that of Mr. Hawkins:—"In one case I have seen a great many cartilaginous excrescences growing from the peritoneum;—they were of a small size, viz., most of them not larger than a garden pea, and grew from every part of the membrane. They were a little softer than the cartilages which cover the extremities of the bones, but had the true structure of cartilage." I am not aware that any account of this tumor has been given by Mr. Stanley to the profession at large, though I have no doubt it is still to be seen in his museum, and has been exhibited to his pupils. I shall not make any apology for sending you the above statement, because I am sure that we all equally value the advantages to be derived from the study of morbid anatomy; and because I consider that any addition to our stock of important pathological facts, however humble the person by whom it is made, must be acceptable to the great body of the profession. With a request for as early an insertion of this letter as suits your convenience, believe me, sir,

Your obedient servant,

WILLIAM ILOTT.

Bromley, Kent, July 11, 1840.

MEDICAL GAZETTE.

Friday, July 24, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi i publicum sit, dicendi periculum non recuso."

CICERO.

HAVE OUR MEDICAL EXAMINATIONS IMPROVED?

In our article of July 3d we gave an impartial abstract of Mr. Carmichael's speech at the first anniversary meeting of the Medical Association of Ireland. In so doing, we animadverted on a strange mistake into which he fell, when he represented the eighteen medical examining bodies of these islands as engaged in an unworthy competition for diploma fees. He asserted, in the plainest terms, that they were outbidding

each other in lowness of qualifications and lowness of fees, and gave the name of Dutch auction to their proceedings : and a very good name it would be, if the facts were as he stated. The only instance, however, which he cited of this unseemly competition, was the Irish College of Surgeons, which, it seems, has lowered its examination, for fear of being deserted by candidates. Now, we volunteered no defence of the Irish College, but left it, and its supposed delinquencies, to the criticism of Mr. Carmichael, and the verdict of his Irish brethren. Our acquaintance with Dublin affairs was not sufficiently great to enable us to say whether the examination at the College of Surgeons was a commendable one, in its lowered state ; but we ventured to affirm, that so far from all the eighteen bodies being engaged in the Dutch auction, “ increase of severity, not of leniency, has been the general characteristic of the changes made of late years in medical examinations.” We quoted the University of Cambridge, and our three London corporations of Pall Mall, Lincoln’s Inn, and Blackfriars, as examples of corporate bodies which had rendered their examination more strict ; and the London University as one whose examination was certainly not fitted for the Dutch auction imagined by Mr. Carmichael. We should have thought that this appeal to the plainest facts must have persuaded every reader, prejudiced or unprejudiced, that Mr. Carmichael had been hurried away by the warmth incidental to public speaking, and had painted from his imagination rather than his memory.

Contrary to our expectation, however, our contemporary, the Dublin Medical Press, shows that there is at least one man in the three kingdoms whom we have not convinced ; for in its number of July 15th, it sets about defending the accuracy of Mr. Carmichael’s statement,

after the strangest fashion. Our first two exceptions are summarily disposed of. “ Even admitting that the examinations at Cambridge and the London College of Physicians have been improved, what is that to the point ? Of about five hundred candidates for medical practice let loose on the three kingdoms annually, about a dozen may, perhaps, be franked by these two bodies*.”

To us it seems most cuttingly to the point. If these two corporations were allowed, on account of their errors, to swell the list of eighteen delinquents, their amendment should not be passed over by professed reformers, on the plea of their insignificance. The first two on your list of culprits obtain a triumphant acquittal, and leave the court without any imputation to their characters : “ oh,” you cry, “ this does not affect our accusation at all—they were people of no consequence !”

Yet this, after all, is merely an *argument ad hominem*, though it is conclusive against the one-sided view of our contemporary ; but every friend to the profession must rejoice at the reform of the corporations in question. Had they remained in their pristine state, it might obviously have been objected that the higher walks of the profession were not swept with the same care as the lower ; but by these well-timed improvements the inlets to medicine have been rendered far more difficult on every side.

We might add Oxford to the catalogue of reformed corporations, as its regulations were thoroughly amended in 1833 ; but our contemporary would, of course, repeat, “ what is that to the point ?”

Come we now to the London College of Surgeons ; “ surely,” the reader will say, “ they ‘ let loose ’ an ample battalion of candidates every year upon the public, and their improvements must conse-

* Dublin Med. Press, July 15th, 1840, p. 46.

quently be to the point." Do not be too hasty, benevolent reader; there is an answer for that too. "As for the boasted improvements in Lincoln's-Inn-Fields, we challenge this avowed advocate of that institution—to prove that any of importance have taken place.*"

We willingly take up this challenge, though we protest against being called the avowed advocate of this or any other institution, at least, if our contemporary by "avowed advocate" means "indiscriminating eulogist."

In the first place, then, the College of Surgeons has from time to time altered its rules, and improved the education which it requires from its candidates, in accordance with the spirit of the age, or, in other words, in compliance with the expressed opinions of reasonable people.

Thus a set of new regulations was issued in October 1829; † regulations respecting certificates, &c., in October 1834; ‡ some very judicious regulations concerning teachers of anatomy in March 1836; § and new regulations for the education of students in June 1838. † Among other improvements, these regulations increase the minimum of surgical attendance at a hospital from twelve months to twenty-one. But, by the last regulations, dated August 20th, 1839, the candidate is required to have attended the practice of surgery, at a recognised hospital or hospitals in the United Kingdom, for three years; three months being allowed for a vacation in each year. In the second place, it is the common and well-founded opinion among the profession that the examination at Lincoln's Inn is a good one, as far as regards anatomy and surgery; and if we wished to confirm a general rule by a single example, we would refer to the judicious and sensi-

sible examination detailed by Mr. Gray in our number for June 12th; even though our Dublin contemporary cites this examination "as positive proof of the imperfection of the test to determine the qualifications of a person for practice."

In the third place, the sincerity of this belief in the soundness of the examinations at the College is shewn by the numbers who apply every year for their diploma, which is sought for, not from the terrors of the law, since unlicensed practitioners in surgery are not prosecuted, but from a wish for the distinction.

Lastly, that this distinction cannot be obtained by a mere formal compliance with the regulations is manifest from the number of rejections. We do not know what proportion they bear to the number of candidates, but we conjecture that they cannot be less than 1 in 12.

We have thus given a few reasons for believing that the College of Surgeons does not make one at the Dutch auction; but we are far from thinking that Utopia is situated in Lincoln's-Inn Fields, or that good sense and open discussion can fail to produce further amendments in their examinations. For instance, as they require attendance on medical lectures, lectures on the *materia medica*, and the medical practice of a hospital or dispensary, the examinations should touch upon these subjects, not only nominally, but really. Our contemporary, however, has discovered the truth, not at the bottom of a well, but floating on the top of one Dr. W——'s advertisement. This subtle grinder sticks his notices about the schools in Dublin, in which he engages to make his pupils unpluckable in London, within a few months. The Dublin Press knows that it is no vain boast, and that the doctor can perform what he undertakes. Nay, more; Dr. W—— engages to pass any pupil, "*no matter how limited his professional knowledge may be,*" and,

* Dublin Med. Press, July 15th, p. 40.

† Ibid. vol. v. p. 152.

‡ Ibid. vol. xv. p. 176.

§ Ibid. vol. xviii, p. 111.

|| Ibid. vol. xxii, p. 588.

if rejected, he will return the money. No wonder that our contemporary italicizes the line we have just quoted; it deserves to be in capitals. Why does not the doctor come to London, take pupils by the gross, and ultimately sell his secret to the other tutors for its weight in gold?

The third one of our London corporations, the Society of Apothecaries, is not noticed by the Dublin Press, but does not deserve to be passed over. Our readers need not be informed that the Worshipful Society has long and successfully laboured to raise the standard of medical education. It has gradually extended the period of attending lectures from a few months to two years and a half. Their regulations of the winter of 1827, on which we commented at the commencement of our career*, required only one course of lectures on the materia medica (including medical botany), one on chemistry, two on anatomy, and two on the practice of physic; while attendance on lectures upon midwifery and the diseases of children was merely recommended.

The regulations dated Sept. 25, 1828, extended the number of lectures considerably, two courses of chemistry being required, two on materia medica and botany, and two courses of anatomical demonstrations, besides two on anatomy and physiology†.

On a subsequent occasion, we gave the details of a very judicious examination which Mr. Henry Storer underwent at Apothecaries' Hall, in Dec. 1828‡, tending to show that the pupils were not required merely to have attended lectures, but to recollect what they had heard.

The regulations issued in April, 1835, are valid, with some slight alterations, at the present moment. They are indisputably an improvement on

the previous ones, though liable to the imputation of crowding too many subjects into too short a time. Either botany and forensic medicine should be struck out of the list of lectures, or, what would be better, six months should be added to the attendance on lectures, and subtracted from mere pounding and pouring.

Nor has there been a want of rigour in examining; such as could be exercised by experienced men who knew that it was their business to supply England with practitioners, and that they must rise their qualifications with caution. Thus, we showed on a former occasion, that from August 1st, 1815, to July 31st, 1834, the rejected were 795 out of 7,028, being rather more than one out of nine; and that the proportion increased in the latter years of the period, so that

in 1828-29 it was 1 in 6
in 1829-30 1 in 6
and in 1833-34 1 in 8 *

In 1820, the rejections were only one in twenty-three.

In England it will scarcely be necessary to quote these documents. To a man who mingles with medical society here, it would appear as superfluous to appeal to the Regulations of the College of Surgeons, and Apothecaries' Hall, to prove our argument, as it would seem useless to a Londoner to prove by parliamentary documents that the streets of the metropolis have been ornamented. Ask any practitioner of experience whether our corporations are outbidding each other in foolish lenity, and he will suppose that you have just dropped from the moon. Our contemporary tells us that he must needs laugh outright at our simplicity in believing that the examinations of our medical corporations have been improved; and we are quite sure that every English practitioner

* MED. GAZ., vol. i. p. 58.

† Ibid. vol. ii. p. 568.

‡ Ibid. z. vol. iv. p. 114.

• MED. GAZ. vol. xx. p. 696.

will more than smile at *his*, for not knowing the fact. We shall have at least 7000 laughers on our side, in London alone. The grey-headed practitioner of twenty or thirty years' standing will tell you how differently things were done in his youth; the staunchest praiser of the days that are gone will confess that, whether in the eager preparation of students, or the scientific rivalry of practitioners, the contrast is most gratifying between the medical England of 1810 and that of 1840; and he will not fail to attribute a great part of this increased energy to the zeal inculcated by our medical corporations. Few now imagine that their education is completed when they receive their diploma or their license; but they feel that their whole life must be a race for knowledge, a struggle for honour and for bread!

We suppose that in order to make out the list of eighteen examining bodies, we must take in the Army and Navy Medical Boards, and perhaps even the Examiner at the East India House: do these also contribute to "the number of unqualified persons annually forced into the profession, for the sake of the fees paid for certificates and diplomas?"

Thus, at this end of the island, there is no such very cheap and rapid way of getting into the profession as might be expected from Mr. Carmichael's speech. How are matters in the North? In Edinburgh the entrance into the profession does not seem to be dangerously facile. The College of Physicians scarcely counts 130 members; while the University and the College of Surgeons have improved their examinations, and shown no tendency to underbid their fellow corporations. The truth is, that in many places the march of severity has been so quick in these points, that the cautious have sometimes been afraid that the mark would be overshot, and either that candidates would shrink from

the examinations, or must, for the most part, be blackballed. This catastrophe, however, does not appear to have occurred anywhere but at the Irish College of Surgeons, so that our corporations have been more long-sighted than they had credit for being. Soon after the improvement of the Edinburgh University examination in 1833, a lugubrious pamphlet appeared, in which the author intimated his fears that the new rules would limit the profession "to a few physicians, polished up to the highest pitch of refinement in all the arts and sciences." Nevertheless, this euthanasia of the profession has not taken place. But we must conclude this long article, which we will do by observing, that if it is possible to find a couple of British Medical bodies that still ply for candidates, by dishonourable facilities, there are at least a dozen which show in the clearest manner that they shrink from the unworthy competition.

CLINICAL LECTURE
ON

POLYPUS OF THE NOSE,

Delivered at St. George's Hospital,

By CÆSAR HAWKINS, Esq.

GENTLEMEN,—So many questions have lately been asked by some among you, that I have thought a few observations on polypi of the nose would form an useful subject for to-day's lecture, particularly as you will often have cases of this disease under your care in private as well as in public practice.

Polypi are morbid growths of the mucous membranes, which are connected by a root or pedicle, more or less broad in proportion to the body of the tumor, which occur in various parts where these membranes are near their external communications, as in the rectum, the fauces or larynx, or the nose; and in the latter situation they may occur either in the nostrils or in the nasal cells; but it is to the former of these situations that I shall confine my remarks. You will find that polypi of some kind or other may be formed in any part of the higher portions of the nostrils, but they grow especially from the upper spongy bones and

middle passage of the nostrils, and generally the outer surface is selected: it has been denied that they originate on the septum; but here you may see a portion of the septum, with a polypus growing from it; they probably, however, never occur in the lower part of the partition of the nostrils. The situation of the tumor materially influences, as we shall presently see, its texture, but at the same time they possess some original differences in their nature. Their form will be given them, as you may see in these preparations, by the cavity in which they grow, so that, at first round or oval, they become flattened by the sides of the nostril, and when they reach the floor of the cavity they will expand in an irregular figure towards the front or back part of the nostrils; the nose being not unfrequently flattened or widened by their presence.

Symptoms.—The presence of polypi in the nose will cause some common symptoms whatever their kind may be; namely, the effects of obstruction of one or both nostrils, so that a person will not be able to breathe except with his mouth open; the voice will lose its tone or sonorousness, and there will be a degree of uneasiness in the nose, with the same sense of stoppage as in a cold; and there is also sometimes a similar discharge of watery mucus: the patient snores at night, and may be awakened by thirst and dryness of the mouth, from its being constantly open in his respiration: he cannot smell perfectly, if at all, because the air cannot be drawn through the nose, and for the same reason his taste is impaired, because that part of the sense which appreciates flavour is lost or impaired, though he still possesses the sense of common taste and touch in the tongue; sometimes the tears run over the face, though you will see large polypi, which do not at all obstruct the nasal ducts; sometimes again, if the polypus is far back in the nostril, deafness may be caused by its pressure on the eustachian tube, and occasionally deglutition is interfered with, as well as respiration, by the palate being pressed out of its proper position; finally, the effects of pressure may be of still more consequence upon the brain, by the polypus interfering with the circulation of blood, or affecting the base of the skull, so that heaviness, and sleepiness, and stupor, will take place, from which persons have been known to fall asleep on horseback, or a barber while shaving; and the unfortunate patient will have, as you have seen not long ago, rigors, delirium, or coma, or convulsions, by which a fatal result is occasioned. It is only to some kinds of polypi, however, that the latter symptoms belong, and it is only in them that the bones of the face expand and yield, so as to cause the frightful deformity, of which

examples have recently presented themselves to your notice, and which led a person, according to Alibert, to commit suicide after contemplating his own figure in the glass.

Diagnosis.—Many of the symptoms of polypi, therefore, being those of obstruction of the nostrils, may be occasioned by other disorders, *ozæna*, caries, and so on; and hence it is necessary to examine the nostrils, which may be expanded by a forceps or a speculum, so that the polypus may become visible, or if not, its existence may be ascertained by a probe or director; and in all cases you should endeavour to discover its form, and the situation of its root, by passing the probe round the body of the tumor. When visible, the polypus may sometimes be made to shift its position by blowing forcibly through the nostril; but if fixed, take care not to mistake serofulous thickening of the schneiderian membrane for polypus, and run the risk of extracting a portion of spongy bone; the opaque and white or pale colour of a polypus is very different from the red florid colour of inflamed and thickened membrane; and it is only in the malignant diseases of the part that much difficulty can exist, when a projection is visible. You have recently seen a man, a patient of Mr. Keate's, with a growth filling the aperture of each nostril; looking at first very like polypus, but on examination you found that it was confined to the lower part of the septum, which is not subject to polypus, and the red swelling on each side appeared to be the parietes of an abscess in consequence of a blow, of which I have occasionally seen instances; and he has left the hospital I believe nearly well after the discharge of matter. I have often known painful attempts to remove polypi, which really did not exist, by the use of forceps. We shall return to the malignant diseases presently; but besides them you will find that there are three forms of polypus of the nose of simple and innocent character.

I. *Vesicular polypi.*—In this kind of growth you will find the nostrils obstructed by a great number of grey or transparent vesicles, (sometimes erroneously called hydatids or hydatid polypi,) which are covered by the mucus of the nostrils in considerable quantity, and which contain a transparent watery fluid mixed with a small quantity of mucus, giving it a little tenacity. In this kind of polypi there is a copious discharge of liquid, as in cold, and they are excellent hygrometers, so that the patient will sometimes in dry weather be able to breathe pretty well, but in a damp atmosphere, interfering with the evaporation of the secretion, will find the cavities totally obstructed. Examine these polypi, and you find that they readily break down, discharging their con-

tents, and leaving in the forceps a few delicate shreds of fine transparent membrane; and the polypi are, in fact, great numbers of oval or pyriform bags hanging side by side, and continuing to form for a great length of time; fresh ones descending as fast as others are broken down. Sir A. Cooper, in speaking of these vesicular, (or as he calls them, hydatid polypi,) says they occur in young persons; but it so happens that the few instances I have seen have all been in adults, so that they may probably form at any age: it is however much less common than the next species of polyp. The softness of the vesicular polypi prevents their occasioning any severe symptoms by pressure, but their numbers give the patient a good deal of trouble.

Nature.—There are two opinions as to the nature of these vesicular bodies: some persons such as Portal and others, believing them to be enlargements of the mucous follicles, a kind of mucous encysted tumor; while Alibert and other authors believe the fluid to be in the common sub-mucous tissue. It is difficult to explain the occurrence in either way: it is not easy to see on the first supposition why such numbers should continue to form for so long a time; and if mere infiltration in the mucous tissue, there seems no reason why the swellings should be in the form of a number of separate and regular bags of half an inch long or more, hanging side by side, instead of having the usual appearance of œdema or puffiness. On the whole I am rather inclined to believe in the follicular origin, which is analogous to one form of polypus of the uterus, where the follicular vesicle attains a considerable magnitude, and the fine membranous bags are just what we should conceive these follicles would be when much distended in so delicate a tissue; at the same time I cannot say, as some assert they have done, that I have seen the orifices of the sacs. One thing I think is certain, that the occurrence of this form of disease depends on a constitutional cause. Mr. Abernethy, (speaking of polypi generally,) says that a person used to have some of them frequently extracted by Mr. Hunter and himself, till one day he gave him a lecture on his bowels, the consequence of which was that no more formed for several years, till a trifling return was caused by his being laid up by a broken leg. I cannot say that I think the general health has much to do with the formation of other polypi, but, with the vesicular species, I have always seen a pale muddy complexion, a kind of cachexia, which in other persons might have caused perhaps common œzæna, but in them occasioned this particular disease in the membrane of the upper part of the nostrils, in which part alone they are formed.

Treatment.—This being the case, their treatment must be constitutional in part; and the remedies which I have seen, I think, of much advantage in assisting the cure and preventing a relapse, have been sarsaparilla and liquor potassæ or hydriodate of potassæ, or, with both together; or, with small doses of bichloride of mercury. I have also administered small quantities of arsenic with apparent benefit; and bitters with alkalies and small alterative doses of blue pill.

With regard to local remedies, it is no use in general to extract these fine membranous substances; but the treatment is essentially the application of astringents: if, indeed, the nostrils are very much blocked up, you may first break down some of the vesicles to make your applications more readily act, but otherwise it is unnecessary to resort to a very painful, or, as Abernethy calls it, a blackguard operation. The best applications are the sulphates of zinc or alum, or copper, or the corrosive sublimate, which may be used of considerable strength as astringents in solution; they may be snuffed up the nostrils, or injected with an ivory syringe, or a piece of lint may be inserted into the nostril, and the solution dropped in while the patient's head is held back. The nitrated quicksilver ointment is of much service to the membrane after the polypi are destroyed, which may be applied by means of a little lint on a bougie as high as it can be inserted. You may also use the copper or zinc sulphate in powder on a piece of lint; and I have used burnt alum, alone, or mixed with a little savine powder, which the patient can snuff up the nostril; but on the whole I prefer the ointment and lotions, which I have mentioned. Some recommend the muriate of antimony or liquor potassæ; care being taken not to touch the sides of the nostrils, which are not ulcerated however by pretty strong solutions. These remedies must be continued for some time after the nostrils seem to be clear; and when the patient is careless I have known him come repeatedly to the hospital for many years, till he has tried all the surgeons in succession.

II. *Gelatinous polyp.*—The next form of polypus is a more solid growth of the mucous membrane, generally of the middle passage of the nose towards the outside, though I have also seen it in the cells and in the æthmoid bone: its appearance is seen in several preparations on the table, and you have also seen it in a patient who has just left the hospital. This was a man, Jesse Green, 50 years of age, admitted into the hospital on May 20th, in Wright Ward; and our notes say that he has had obstruction of the nostrils for thirteen months, and lately has had a yellow discharge from the nose. There are several gelatinous po-

lypi in each nostril, which appear to be attached high up, probably to the spongy bones, the nostrils are completely obstructed, and no air comes through the nose in blowing forcibly; he is also unable to smell or to speak freely. On the 21st I extracted a large mass of gelatinous polypus from the right nostril, and several portions from the left, and ordered a lotion containing sulphate of zinc $\mathfrak{z}\text{ss}$. to $\mathfrak{z}\text{viij}$. of water, which was afterwards increased to $\mathfrak{z}\text{ij}$. of zinc. This he was still unable to snuff up, and it was therefore injected. On the 23d some more fragments of the brittle polypi were extracted. On the 25th the right nostril seemed quite free, and some more was extracted from the left; one polypus of firmer texture than the rest coming away. On the 28th both nostrils seemed free, and he has since left the hospital apparently well.

You had then an opportunity of seeing the polypus in the living person as a dull white mass, covered by fine membrane with a yellow mucous secretion; and when extracted you perceived that it was a soft brittle substance, like firm jelly, consisting of infiltration of serum and lymph in the mucous and sub-mucous tissue, having a few delicate fibres running through its substance from the root to its circumference; and if these fibres are of unequal length they give an irregular or serrated appearance, to the surface of the tumor, which however, as you may perceive in the preparations, acquires its shape chiefly from pressure, and is therefore commonly broad and flat at the sides and expanded below, while in the early stage it is oval or globular before it has been compressed. In the interior of the polypus may also be seen a few delicate vessels seldom of much size. The gelatinous polypus is a solid mass of mucous membrane expanded by effusions in its tissue, not in separate bags like the vesicular polypi, and evidently not consisting of condensation of vesicular polypi, but different from its first origin, as well as in its usual situation; the vesicular polypi being only formed high up in the nostrils, and the gelatinous generally in the middle of the outer part. The gelatinous polypus is apparently a much more local disorder than the other, growing in healthy persons, frequently in children, though as you have seen it occurs also in adults. The gelatinous polypus is frequently single, so that if removed entirely with its root there will be no return of the disease: I extracted this, for instance, six years ago from a boy, and I know he has been quite well since that time. Sometimes there are thought to be more than there really are, in consequence of a single large polypus being extracted at several operations in separate portions, which are supposed to be distinct polypi; still, you must not too confidently promise a

cure, as two or three tumors may be present at once, or may successively appear, though it does not so much depend on a constitutional cause as the vesicular polypi.

Treatment.—The treatment of the gelatinous polypus is essentially mechanical; sometimes, indeed, if it is a soft one: some one of the astringent applications, before spoken of, for the vesicular kind, such as the strong solutions of zinc or copper, will effect a cure; but I have most frequently seen them fail: they are of great service, however, as you saw them used in Green, to assist the cure and prevent a return, and you may try them occasionally without operation, in which case you must use them stronger than the lotion employed in him, as they occasion less inflammation by themselves, than when used with the forceps. Green, you observed, had on one occasion a good deal of pain about the forehead and nose. You may dissolve as much a $\mathfrak{z}\text{j}$. of Sulphate of Zinc, or $\mathfrak{z}\text{ss}$. of Sulphate of Copper, in an ounce of water, if a weaker lotion has little influence.

The forceps should be rough, so that they may not slip off, and you should endeavour to place them as near the root as possible, the situation of which you will ascertain previously with the probe, and having laid hold of it, you twist the polypus off by turning the forceps, at the same time that you draw it down. In Green there was no bleeding to signify, nor is there in any case of gelatinous polypus; a little cold water, or a little piece of blue lint, will easily stop it, if there should be. The lotion, or ointment, or powder, which were before spoken of, are to be used when the bleeding has stopped; and in a day or two you examine the nostril again, and extract what may still appear to obstruct it, and let these applications be continued for some time, if there have been several polypi. In many cases, however, a single operation may be all that is required, and the root being perfect, nothing need be done subsequently. Sometimes, as you perceive in this preparation, a little piece of bone comes away with the root of the polypus; but as the bone has no share in its formation, it is quite as effectual to draw away the membrane from which it grows.

3. *Fibrous polypus.*—The fibrous, or sarcomatous, or fleshy polypus, is a more firm and solid, and a more highly organized tumor than the others; consisting of a fibrous tissue, with larger blood vessels, and with very little appearance of fluid effused in its interior. It is sometimes so solid as to cut with difficulty, and with a sound like that of fibrous cartilage, but it does not often attain so much density as this, and the pedicle is usually more condensed and fibrous than the expanded part of the

tumor. Like all fibrous tissue, it may undergo conversion in part into osseous matter, and I have seen one partly cartilage and partly bone, while another by its side has been of the usual texture. When you examine it in the living person it is seen to be of a reddish white or brownish colour, and is covered by a thin membrane, which is sometimes as smooth as a serous surface; its secretion also being more watery than what is commonly seen on the gelatinous polypus. Like the gelatinous polypus, it is generally situated on the outside of the nostril, but is more often seen further back, attached to some part of the posterior nares; perhaps it never grows on the softer structure of the æthmoid bone, but is now and then found in one of the cells. The fibrous polypus is often single, but there are sometimes several; it is, perhaps, always formed in adults, at least I have never seen one in a child.

Texture.—By many persons the fibrous polypus is distinguished from the other species, but not by all; by Sir A. Cooper, for instance, the fleshy polypus is spoken of with the gelatinous kind; by Boyer, whose description of polypus is on the whole the best I know, the vesicular and gelatinous species are included under the single name of mucous polypi, while fleshy polypi are spoken of separately, and divided into scirrhous and simple fleshy polypi, though curiously enough the characters of the two are exactly reversed. John Bell, and others, speak of these distinctions as imaginary, and thinks that the apparent differences are from different stages of the same tumor being separately described.

It appears to me that neither of these opinions is quite correct: sometimes, doubtless, the gelatinous polypus may gradually become more solid, till it is fibrous in texture; but in other cases a very small polypus is quite solid from its commencement. Sometimes, therefore, the fibrous polypus may be the sequel of the gelatinous; but in other cases it has no gelatinous condition, and in no instance can either form of disease be the sequel of the vesicular species. The difference between the fibrous and gelatinous polypus appears to me to arise from the textures which are affected; if only the mucous surface, then the gelatinous polypus will be the form of tumor; but if the whole thickness of the membrane is implicated, that is, the attached surface, which is the periosteum of the bones also, as well as the free mucous surface, then the polypus will be fibrous; sometimes, consequently, in the first instance; sometimes only in a later stage, when the diseased action has spread to the more firm tissue at its base. Thus, if a polypus grows from the upper parts

and middle of the nose, where the fibrous tissue is scanty, it is generally gelatinous; but if it be far back, towards the fauces, where there is a good deal of fibrous texture, the polypus is almost always fibrous: here, for instance, is a fibrous or fleshy polypus, removed by ligature from the back of the nostrils, in a patient from whom gelatinous polypi had previously been extracted from the anterior part of the cavity. Probably, from the same reason, the texture is softer in a polypus of rapid growth, and fibrous in one that has proceeded more slowly; and again the base is more fibrous than the pendulous part, being nearest to the fibrous tissue. The same causes may, therefore, give rise to both gelatinous and fibrous polypi, and the same patient may have both kinds at once: both are of the same nature, as far as malignancy is considered; but although both are of innocent nature, their difference of texture make the one a more important disease than the other.

Symptoms.—The fibrous polypus alone produces those severe and fatal effects which have been described, because it is only in this kind that there is firmness and vascularity enough to make the parietes of the nostrils yield to its pressure, in the way you can see has been done in this preparation. The bones, you perceive, are first expanded and altered in shape, the ossific deposit still going on in proportion to the interstitial absorption; then they are pushed aside and separated from each other, or the apertures of the nasal bones, or the cells, or the nasal canals, are widened and distended, and filled by projections of the tumor; then the growth is still more rapid, the bones are absorbed, but no fresh ossific material is allowed to form, and the polypus comes in contact with the skin or other textures in the face; the septum is absorbed, the nasal bones destroyed in part, or the orbit, or maxillary, or palate bones, are in great measure lost; finally, the skin becomes distended and discoloured: it is first of a dark red, then of a livid colour, then it is ulcerated, and the polypus fills up the ulcerated aperture, and the edges of the skin being everted and covered by thick florid granulations, and the projecting polypus being also vascular and fungous, and the surface bleeding as vessels are opened by ulceration and sloughing, the whole disease bears a very strong resemblance to a malignant tumor of fungous character. You have some of you had an excellent example of this fatal stage of the disease, in a patient under Sir Brodie's care, just a year ago, and you can here examine the nature of the tumor.

This was a man, 47 years of age, a gardener, who was admitted into the hospital, July 7th of last year, whose case was thus

described. His nose is much distended and enlarged by a tumor which fills the whole of the anterior nares. The tumor projects forwards from the face, stretching the parietes of the nose over it, and protrudes slightly through the anterior nasal openings; it is largest on the left side, and somewhat overlaps the eye. The nose has given way on the left side, and a fungous excrescence, of rather a brainlike appearance, about the size of a nutmeg, has protruded. The tumor is soft and elastic to the touch; the surface, where it is exposed, appears raw, and covered with irregular fungous granulations, disposed to bleed when touched, but not very painful. A probe can be passed round the tumor, between it and the parietes of the nose, in every direction, excepting on the left side; where it protrudes through the side of the nose, there are some adhesions between the tumor and the skin. The tumor does not extend far back, and cannot be felt from the palate; the septum nasi is perfect below, but perforated above, the tumor filling the right nostril from the perforation.

He states that twenty years ago he suffered from what was considered to be polypus of the left nostril: he was able at first to blow it out: it had the appearance of soft spongy flesh, the same nearly as at present protrudes through the nostril, and it would bleed when so blown out. Seven years after its first appearance, it was extracted with forceps, and has been so twelve or fourteen times since; it bled after the operation, and plugging the nose was once employed: the last operation was about two years ago, and two or three pieces of bone were then torn away. The tumor, before the last operation, was confined to one nostril, but has grown rapidly since, and increased greatly while he was ill and confined to bed, the early part of last spring (from March to April), with what he says was a violent purging. He is much reduced in flesh, and has been getting rapidly thinner. He has been in the Sheffield Infirmary since the tumor has been increasing, and has had lotions applied, but without benefit. No glands are enlarged. On the 20th, the tumor had increased, the ulcer of the skin had enlarged, and more fungus protruded, with much fever and irritation, and slight tendency to delirium. On the 23rd, he had severe rigors, with a pulse of 120, and the tongue became drier and browner. On the 26th, he was delirious again, with occasional rigors, and increasing debility. On the 28th, he had a fit of convulsions, succeeded by coma, and he died on the 29th, in this condition.

Thus, then, terminated a fatal case of polypus of the nose, which resembled very

much a malignant tumor before death; and you may see that the mass of disease is altered also, so as to be soft and brittle and more vascular, and to look like a malignant disease. It is said, indeed, by Alibert and Dupuytren, that this softening of a polypus in its later growth does not extend to its root, but you may see here that it reaches quite to the membrane from which it grows on the outer part of the nostril. Still, however, I believe that the resemblance is incidental only, and that the tumor was a single fibrous polypus, though I certainly thought that it must be malignant, till I had examined the disease thoroughly after death.

The essential characteristic of a malignant tumor is, its power of contaminating other structures contiguous to it; so that in several of these really malignant diseases you may see the bones converted into the same structure, the cells filled with new growth, and every texture nearly alike in appearance: examine the preparation on the contrary from the patient whose history I have just read to you, and you may perceive that notwithstanding its advanced stage, the disease is still entirely confined to the mucous texture and its fibrous outer part, so that you can separate the membrane from the bones, and they are seen to be perfectly unchanged in texture, though altered in shape, and in part absorbed by pressure: all the cells are perfectly healthy, though their shape is somewhat changed; and even the mucous tissue itself, except where the tumor originated, was quite healthy, being only thickened and more vascular, as might be expected; and at one point you may see a small gelatinous polypus attached to the thickened membrane.

Here, then, twenty years elapsed, and yet no other texture has been changed, and even a longer time has been known to have passed, at the end of which the polypus has still been simply fibrous. Some obscurity has been given to this subject by perversion of terms, such as that I have alluded to of Boyer, but still more from cases having been quoted again and again by different writers as examples of polypi, which were really instances of malignant tumors of other kinds. We shall return to them presently, after I have spoken to you of the treatment of fibrous polypi.

(To be concluded in our next.)

INOCULATION WITH THE MATTER OF "GREASE"

IN THE HORSE PRODUCING SYMPTOMS OF VACCINE IN THE HUMAN SUBJECT.

DR. STOKES presented two drawings of the appearances in a case which had recently occurred in Dublin, which was of

importance, as tending to corroborate the opinions of Jenner with respect to the origin of cowpock. For the opportunity of witnessing this case, Dr. Stokes was indebted to Mr. Pakenham, under whose care the patient had been placed. After quoting some passages from the works of Jenner, Dr. Stokes observed, that some had misunderstood Jenner's opinions on this subject, and believed that he had held that the direct inoculation with the matter of grease was capable of producing a disease the same as vaccine in man. This was not Jenner's doctrine. He says that the fluid of grease seems capable of generating a like vaccine, *after it has passed through the system of the cow*. But in speaking of the form of disease produced in man by inoculation with the matter of grease, Dr. Jenner was not distinct or accurate in his description. He speaks of ulcerated sores on the hands, inflamed lymphatics, and abscesses of the axilla, and says that many medical friends of his were aware of the similarity between the eruption on the hands after infection with grease, and that which succeeds cowpock, but he does not give any precise description of the appearances which result from inoculation with equine matter in the human subject. He states, however, that persons who have had sores on the hands from inoculation with grease, do not appear to be susceptible of small-pox, and alludes to the great difficulty frequently experienced in producing disease with variolous matters in farriers and persons who have been much engaged about horses. Dr. Stokes proceeded to read some notes of a case of equine infection, which occurred in 1793, and is detailed in Dr. Jenner's work. Three men, on receiving the infection of grease, got sores on the hands, with pains in the axillary glands, shivering, and lassitude; and two of them, who had previously gone through the small-pox, said that their sensations were similar to those they had experienced on the invasion of that malady. The whole duration of the febrile symptoms in these cases was about twenty-four hours. Dr. Stokes next exhibited a drawing of the pustule produced in a child by inoculation with matter taken from one of the men infected with grease. He also exhibited a drawing of the true vaccine pustule, and contrasted it with the former. The only apparent difference between them was, that there was a greater degree of lividity about the equine than the vaccine pustule. As a further proof of the close connexion between the two poisons, Dr. Jenner states that he has never been able to discover any instance of the prevalence of the vaccine pustule among cows, which

ld not be traced to cows originally in-

fected, or which had been milked by persons labouring under equine infection. The opinions put forward by Dr. Jenner on this subject were controverted by some of his contemporaries, among whom the principal was Dr. Woodville, who stated that he had made several experiments to try whether cowpock could be produced by grease, but had always failed, and that his friend, Mr. Coleman, of the Veterinary College, had made several experiments of the same kind with a similar result.

The case which had occurred to Mr. Pakenham was this: The servant of a gentleman residing near town, a man of good constitution and temperate habits, was in the daily habit of cleaning the hoofs of a horse labouring under grease. On one occasion the animal became restive, overturned the bucket in which the diseased limb was being washed, the edge of which cut the man over the upper lip. The groom immediately took up a sponge he had been using, and which was saturated with the matter of grease, and wiped his lip with it. He did the same the next day, and the day after, so that the matter was applied to the broken surface three, and perhaps four times. On the sixth day he became ill, complained of headache, lassitude, and loss of appetite. On the same evening a vesicle appeared on the upper lip, and next day another on the superior part of the cheek over the malar eminence; a third was placed more internally under the lower eyelid. Dr. Stokes saw him on the ninth day, and the appearances presented by the vesicles were such as were represented in the drawing he was about to exhibit. The drawing was taken on the tenth day. Dr. Stokes pointed out one of the pustules, and observed that on the ninth day it presented an appearance precisely similar to that of a vaccine vesicle, the areola being beautifully marked, and the vesicle so like that of a cowpock, that no distinction could be perceived. Around this vesicle there were several smaller and less regular ones. The original wound presented the appearance of a superficial eschar, and the cheek was swollen, but the constitutional symptoms were so slight, that the man was up and walking about. The case was seen by several medical men familiar with the phenomena of cowpock, and all agreed that nothing could be more like it. Dr. Stokes exhibited also another drawing of the parts taken on the 15th day, and observed that the appearance of the scab and of the retreating areola were very similar to those observed in the same stage of ordinary vaccinia. The chief interest of the case was, that it exhibited a form of disease originating in equine infection, and having certainly no connexion with glanders. He had hoped to be able to

procure a drawing of the horse's heel, but had not been so fortunate as to obtain it. The case shewed that a disease remarkably similar to vaccinia might be produced in the human subject by the matter of grease. The only points of apparent difference between them were, that in the latter the matter contained in the vesicle seemed more purulent, and the surrounding areola somewhat more livid.—*Dublin Journal of Medical Science.*

SMALL-POX STATISTICS.

To the Editor of the Medical Gazette.

SIR,

PERHAPS I ought to be frightened at the tone of Dr. Gregory's letter, and abstain from any allusion to it; but I hope I shall not repent my audacity if I venture two or three exculpatory lines. In your former volumes, and in the daily press of the present year, I have seen letters which convince me that enemies to vaccination still exist, who would rejoice to find an unfavourable statement; and I have no reason to think that they would be more successful in detecting the inaccuracy of such a statement, than your note to my former letter shewed yourself to be. I was therefore justified in calling attention to a material uncorrected error, which might be mischievously used. I am at a loss to know why Dr. Gregory should choose to notice that *manifest* is spelt *manifest* in my letter, unless he wishes to intimate that the difference between *vaccinated* and *unvaccinated* is equally unimportant; but if his notions are really so confused, it furnishes him with the best excuse for treating as identical assertions—your statement "that there is no proof whatever that with cow-pox any other disease can be communicated," &c. and the opinion which he groundlessly charges upon us, of "the impossibility of communicating any other disease along with cow-pox."

It is rather cruel on his part to say that I do not specify reasons for the manifest duty of selecting healthy lymph, since, had I done so, I might have been censured for needless prolixity or clumsy logic, in specifying reasons for a duty which I had just before declared to be manifest. There can be no doubt that the duty is manifest, since not even the atmosphere of the Small-Pox Hospital is murky enough to conceal the truth from Dr. Gregory, who advances two reasons in proof, of which the first is quite sufficient for every friend to vaccination. I might easily imitate him by pointing out what he has not said, as well as commenting upon what he has said; but he writes so loosely and unfairly

that no good could arise from following him up. Reply would beget rejoinder, and criticism be succeeded by explanation, until many of your valuable pages would be fruitlessly expended; and the only result would be, that when your patience was exhausted, your readers as well as yourself would heartily wish us both in that place where the "wash and rapidity" of small-pox statistics ought to be deposited.—I am, sir,

Your obedient servant,

HENRY COLES.

Cheltenham, July 20, 1840.

MR. OWEN AND HIS REVIEWER.

We subjoin a letter from our reviewer, in reply to Mr. Owen. On perusing it, we think that all will concur with us in regarding it as a document which alike by its brevity, moderation, and freedom from personalities, forms a striking contrast to the one which we had last week the pain of laying before our readers.

COURT APPOINTMENTS.

THE Queen has been pleased to appoint Charles Locock, Esq. M.D. to be first Physician-Accoucheur to her Majesty; Robert Ferguson, Esq. M.D., to be second Physician-Accoucheur; and Richard Blagden, Esq. to be Surgeon-Accoucheur.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, July 16.

R. J. P. Steel.—C. P. Keel, Southampton.—W. C. Walker.—J. Good, Lymington, Hants.—G. Goodwin, Ashbourne, Derbyshire.—J. W. Edmonds.—J. Davies, Colleshill.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

July.	THERMOMETER.		BAROMETER.	
	from	54 to 75	30.20 to 30.12	
Wednesday 15	42	77	30.09	29.93
Thursday . 16	48	71	29.91	29.84
Friday . . 17	54	70	29.73	Stat.
Saturday . 18	56	72	29.67	29.52
Sunday . . 19	50	68	29.49	29.51
Monday . . 20	52	71	29.51	29.63
Tuesday . . 21				

Prevailing wind S.W.

On the 15th and two following days generally clear. The 18th cloudy, with rain. The 19th, noon clear, otherwise cloudy; rain in the morning and evening. The 20th, morning clear, otherwise cloudy, with rain. The 21st generally clear, except the afternoon, when rain fell.

Rain fallen, .145 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

STRUCTURE OF THE TEETH—REPLY TO MR. OWEN.

To the Editor of the Medical Gazette.

SIR,

WHEN, after a full discussion of the merits of a question, one of the parties to a controversy, in default of legitimate argument, resorts to abuse and misrepresentation, he signifies very efficiently that his cause is hopeless, and at the same time he spares a respectable adversary the necessity of replying. To Mr. Owen I shall not degrade myself by addressing one word on his letter appended to the *GAZETTE* of last week. I shall leave its coarse personalities—its repetition of already refuted arguments—its gratuitous assumptions—its confused and unintelligible statements—and its columns of irrelevant matter, to produce their natural effect upon the mind of the reader.

In my last article on this subject, I accused Mr. Owen of fabricating evidence by falsifying a quotation, and to this charge he has not found a word to say in reply. Indeed, so far from taking this warning, or disowning such an unworthy system of attack, he pursues it zealously. The following instance of veracity and fairness, in his letter of last week, speaks for itself:—

“As to the paragraphs,” (he says—*MEDICAL GAZETTE*, No. 43, p. 661*.) “which next follow in the *Literary Gazette* report, and which include the illustrations of Mr. Nasmyth’s notions of dental development by deposition of thin ossified layers of ivory, or the transition of peripheral layers of detached cells with central points on the pulp’s surface, and which illustrations he adduces from the known facts of the laminar decomposition of the mammoth’s tusks, and the alternate strata of red and white produced by Hunter’s experiments with madder, and which Mr. N. asserts to be a result incompatible with any other theory—as these paragraphs, I say, are too stubborn to be made to tell the new story by any process of transposition and mutilation, they are wholly omitted in the proof now in type in the published Abstract, prepared, despite his quibble, by Mr. N. himself; they occupy one column and a half of the closely printed page of the *Literary Gazette*, l. c. p. 598; thus we have the curious phenomenon of the abstract being longer than the memoir; the part greater than the whole.”

“I thought my conjecture, in my letter to Professor Phillips, as to the requisite extent of mutilation to produce conformity, somewhat hazardous; but the quantity of unsound parts in the original memoir,

which the author has found it essential to excise, surpasses all anticipation.”

The whole of this statement is utterly false. The passage in the *Literary Gazette*, referred to by Mr. Owen, occupies only half a column, and instead of being omitted in the memoir is there given as follows:

“The laminated cellularity of the ivory, which Mr. Nasmyth had shown was a natural consequence of the cellular structure of the pulp, was also borne out, he thought, by facts coming under daily observation, or recorded by scientific inquirers, which could not be explained by any other theory: viz., by the evidently laminated and concentric structure of the teeth of the mammoth, which is rendered directly evident during their decomposition by the experiments of Hunter on the teeth of animals fed on madder, by the circumstance that ivory is found to possess considerable strength, if cut parallel to the long axis of the tooth, and that it is weak if cut at the right angles; and also by many other phenomena of frequent occurrence. When a man persists in resorting to such a mode of warfare as this, I am sure the reader will excuse my declining the contest.

Again, the following extract from the *MED. GAZ.* of Jan. 17, 1840, will enable the reader to judge of the value of Mr. Owen’s latest discovery: viz. that Mr. Nasmyth is guilty of plagiarism from Schwann.

“We are requested by Mr. Nasmyth to state that the report of his paper on the structure of the teeth, read at the meeting of the British Association, in August last, and published in the *Literary Gazette* of Sept. 21st, from which we drew the materials for an article inserted in this journal on the 3d of the present month, errs in attributing to Mr. Nasmyth, instead of Mr. Schwann, a recent German writer, the comments on Purkinjé and Raschkow, given at the conclusion, in the summary of foreign authorities on the subject; and also the comparison between the ossification of cartilage and the formation of dental bone.” By this it appears that the passages adduced by Mr. Owen, as stolen from Schwann, had already been expressly pointed out by Mr. Nasmyth, as extracts from the German author.

The newly introduced absurdities regarding the translation of Retzius, and the capsular investment of the tooth, are too ridiculous to require notice.

Mr. Owen’s misrepresentations stand in no need of further comment; his repetitions require no fresh argument; and to his abuse I avow myself incapable of replying.

Your obedient servant,

THE REVIEWER OF MR. OWEN’S WORK.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, JULY 31, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

—
DISEASES OF JOINTS generally.—*Those of particular Tissues.*—The SYNOVIAL MEMBRANE.—The ARTICULAR CARTILAGES.—SCROFULOUS DISEASE.—DISEASES OF PARTICULAR JOINTS.—The HIP and the KNEE—their Characters, their Diagnosis, and their Treatment.

SYNOVIAL INFLAMMATION.

THIS affection may extend from adjoining parts, or begin in the membrane itself; but we confine ourselves here to the latter. It seldom attacks young children, is less rare towards puberty, is frequent in adults; this is the reverse of what happens with respect to some other of the diseases of the joints. Where it is a consequence of some constitutional cause, such as gout, rheumatism, syphilis, &c. it is usually not very severe. It may succeed to physical injuries, but the most frequent source of the disease is cold. It may leave the joint with its functions impaired, or may totally destroy it. For the most part it is a chronic or slow inflammation, which, while it impairs, does not altogether destroy the functions of the joint. Pain is at first usually referred particularly to one spot; it increases for a week or ten days, and even then may not be very great; sometimes, however, it is very distressing. In a day or two after the pain begins, swelling may be apparent; this swelling at first arises from a preternatural collection of fluid in the joint. When the inflammation has existed for some time,

the fluctuation is less perceptible, because the membrane becomes thickened. The form of the swelling is peculiar; it results from distension; the ligaments at certain points resist its progress, and give it a somewhat lobulated appearance. After synovial inflammation has subsided, the fluid is absorbed, and in some instances the joint regains its natural figure and mobility; in others the stiffness and swelling remain, and the patient is then very liable to a recurrence of the disease. In some cases the disease is more acute; the swelling is then almost coeval with pain, the skin is red, the pain severe, and greatly aggravated by motion at the part; with symptomatic fever. In a few days, if left to itself, the disease may assume a chronic form, or subside altogether.

Treatment.—When the disease is complicated with rheumatism, opium, combined with ipecacuanha, or other diaphoretics, colchicum and mercury, may be preferred. Where many joints are affected, colchicum wine, in doses of fifteen to thirty minims, three times a day, I prefer. Where only one or two joints suffer, calomel and opium, in such doses as to affect the system, may do best. Where syphilis has to do with it, a well regulated course of mercury will probably cause it to disappear. In most cases, however, our principal reliance must be on local remedies. In the acute form of the disease leeches and general bleeding may be required. If the swelling be sudden, and the pain be great, warm fomentations and poultices may relieve; otherwise, cold lotions do better. Chronic inflammation does not so easily subside: the joint must be kept perfectly quiet; blood must be abstracted locally by cupping or leeches (the former is the surer and preferable mode;) it may be necessary to repeat it two or three times; in the intervals cold lotion must be kept to the part. When the inflammation has subsided, one or a succession of large blisters may be used. If the joint be

much distended, it may be punctured. The puncture, if it be small, will give only present relief, for the joint will quickly fill again. If suppuration has taken place, a free opening into it will often be attended with the best effects. The most prudent method is first to puncture with a needle, and ascertain the nature of the fluid; if actual pus, the lancet may be used afterwards. When inflammation is in a great measure relieved, rubefacients are often useful. Issues and setons are useful in chronic cases. No other active remedies seem to be of much use; but much may be done by negative treatment, especially by absolute rest. Stiffness and thickening may be much relieved by slight moxas, by passing a red-hot iron very lightly and quickly over the surface, or by friction after the plan of Grosvenor; but this remedy should always be used with caution, as it has sometimes occasioned the return of inflammation. Warm douches are also useful, as well as the vapour bath, but all these methods require time and patience. It is often very difficult, without, or even with a previous history, to determine whether synovial inflammation, or "ulceration of cartilages," has been the primary affection; but this is of less importance, because, whatever the origin, when it has proceeded far the treatment is the same; and generally, when suppuration has taken place, removal of the limb alone promises much success.

THICKENING OF THE SYNOVIAL MEMBRANE.

As to *thickening* of the synovial membrane, in which that tissue loses its natural organization, and becomes converted into a thick pulpy substance, of a light brown, or sometimes of a reddish-brown colour, the disease, says Sir B. Brodie, generally takes place not long after puberty. In the origin of this disease there is a slight stiffness and tumefaction, without pain or much inconvenience. These symptoms gradually increase. In the greater number of cases, the joint at last scarcely admits of the smallest motion. The form of the swelling bears a certain resemblance to that of synovial inflammation, but it is less regular. The swelling is soft, elastic, and gives the sensation of a fluid. There is little or no pain till abscesses form, and the cartilages ulcerate; the abscesses heal more readily, and discharge less pus, than in the latter disease. At this period hectic is developed, and unless the limb be removed the patient gradually sinks. The progress of this disease is variable; generally two years elapse before it arrives at its last stage. The *diagnosis* is seldom difficult. The gradual progress of the enlargement, and stiffness

of the joint, without pain, and the soft elastic swelling without fluctuation, in the majority of cases enable us to distinguish it readily from all the other morbid affections to which the joints are liable, except those of chronic inflammation of the synovial membrane, with which it may be confounded.

Treatment.—We must not be sanguine that a remedy will be discovered for this affection; very many have been tried and failed. By means of rest and cold lotions, the progress of the disease may be somewhat checked. If there be much pain from ulceration of cartilages, some benefit may be derived from warm fomentations or poultices; but no method seems to be capable of more than checking somewhat the progress, and relieving symptoms. In every case, towards the termination, there is ulceration of cartilages, formation of abscesses, and consequent general disturbance, which render amputation necessary as a means of saving life.

Many illustrative cases of these several varieties of synovial disease may be found in his very able work. "A man was admitted into St. George's Hospital, with swelling of the knee, accompanied by pain, rigidity, and fluctuation. These symptoms yielded to the use of liniments and blisters. Two months after he died of fever. Upon examination, the synovial membrane was found distended, so that it was pushed out to about the extent of an inch and a half beyond its ordinary limits. Throughout, except where it covered the cartilages, it was of a dark colour, resulting from inflammation, and was as much injected as the conjunctiva in ophthalmia; at some points coagulable lymph lined the capsule. A young man felt a painful tumefaction in one knee, which he attributed to cold. Different remedies were employed; another disease of the leg required amputation, and the knee was examined. The bones, cartilages, and ligaments, were in a natural state; the synovial membrane was the eighth of an inch thick, and converted into a cartilaginous structure, and was strongly adherent to the cellular tissue around. A girl, of nine, fell on the hip; she suffered little inconvenience, walked out during the day, and danced at night, but felt a rigor which obliged her to return home and go to bed. The next day she complained a good deal of the hip, and of the knee of the same side; fever was developed, which increased, until she became delirious, and in a week she died. Twenty-four hours after death her body was examined: the viscera were healthy, but the hip-joint contained half an ounce of dark pus, and the synovial membrane, at the point where it is reflected upon the head of the femur, was ulcerated to the extent of a shilling. A

man having suffered a contusion of the shoulder, it was followed by tumefaction and severe pain at that joint. A nervous fever, which attacked him after the accident, destroyed life in a few days. Upon examination, half an ounce of pus was found in the shoulder joint. The synovial membrane was inflamed and ulcerated to the extent of a sixpence, at the point where it is reflected upon the neck of the humerus. In all these cases we see that this membrane alone was affected, presenting the different degrees of inflammation that we have admitted. Most commonly, however, the disease extends farther, invading other tissues of the joint, as we shall see hereafter.

Ulceration of Cartilages.—Can articular cartilages ulcerate? So great an authority as Brodie, we find, is of opinion that they can, at any period of life, but that the most frequent instances are found between the period of puberty and thirty five; that it usually affects a single joint, but may attack two or three; that it forms the great majority of those cases of caries of the hip-joint which occur in adult persons.

It is, and has long been, customary to describe inflammatory action, and the many changes it brings about, as affecting the synovial membrane, covering the articular cartilages. Nesbitt and Hunter first spoke of this covering, but never demonstrated it. Bichat and his disciples only admitted it analogically, and few persons have contradicted them. Gordon, many years ago, said that it was a mere anatomical refinement, but his opinion rested on assertion only. John Bell and Dorsey asserted that diseases never began in it; Cruveilhier and Magendie have reiterated it. Certainly the scalpel demonstrates that it terminates at the circumference of the articular facets. The transparent pellicle, which can be detached by separating, slowly, a slice of a diarthrodial surface, is, I apprehend, a portion of the cartilage itself, and has no relation with the adjacent synovial membrane. Exposed in a living animal, it may remain an indefinite time in contact with the air, may be touched and irritated, without ever becoming injected, reddened, tumefied, or in the least painful, whilst the proper synovial membrane is intensely inflamed. The general opinion is, that if the tissue of articular heads be injected, it is spongy easy to see that instead of expanding and diverging in the cartilage, the arteries and veins form arches in the osseous tissue itself; that cartilages are formed of perpendicular filaments, or superposed plates, if they be not homogeneous, containing neither vessels, nerves, nor cellular tissue, being in all things similar to the enamel of the teeth, from which, according to Cruveilhier and Larrey, they only differ in cohesion and hardness; that their appear-

ance is so fixed that nothing can change it; that in disease there is no mention of redness; that if they disappear during disease, it is by "erosion," solution, or molecular absorption; that, however much may be destroyed, what remains is unchanged; in fact, that it is physically altered, but not diseased. Morand found, in examining Madame Sapiot, in whom all the bones were softened, that the cartilages of the hip and the knee were perfectly healthy. This opinion Sir B. Brodie has long combated; and, to a certain extent, his views have lately received a kind of confirmation, which was previously wanting; Mr. Liston having, it is believed, succeeded in injecting cartilage. He very kindly allowed me to inspect his very beautiful specimens, and I am not prepared to say that the opinion of their being injected is incorrect. That injection passed along a canal in the inflamed cartilage I cannot doubt, but the injection did not seem to me to branch out or radiate from this canal through the cartilage; it passed along to the surface, and there was fairly extravasated between the cartilage and a layer of lymph, and partly, perhaps, penetrated that lymph. It is true that there are other tissues in which vascularity cannot be demonstrated in the state of health, though it can when they are inflamed; but in those cases vascularity is then very decided, which is not the case with cartilage.

Sir B. Brodie maintains that articular cartilages may be primarily inflamed and ulcerated; that the ulceration may and frequently does begin on its articular surface, and that the inflammation may extend to the other tissues of the joint; that the cartilages may here and there be changed into a fibrous mass, that they may be ulcerated at many points, and that the articulation may be filled with fetid pus; and that this affection is altogether different from ordinary inflammation of the synovial membrane, and the spongy extremity of bones. To this view of the case it is objected, that the so-called ulcerations were mechanical destruction, or a breaking down by caries: certainly, in most of the cases, there was a softened or carious or tubercular bone below the ulcer; the cartilage not being tumid or vascular.

It is said that this inflammation and ulceration may be seen at all ages, but that it is most frequently seen in young persons; most commonly in the hip and shoulder joint.

The only symptoms of this disease met with for some time, says Brodie, are pain; and if the articulations of the lower extremities be affected, pain and a slight degree of lameness in the lower limb. The pain at first is trifling and only occasional, afterwards severe and constant. It resembles

a good deal the pain of rheumatism, since it has often no certain seat, but is referred to different parts of the limb. As the disease advances, the pain becomes exceedingly severe, particularly at night, when the patient is continually aroused from sleep by painful starting of the limb. As the pain increases in intensity it is more confined in its situation. Wherever the pain is situated it is aggravated by the motion of the joint; but it is aggravated in a still greater degree by pressure of the articular surfaces one against another. This disease may be confounded with inflammation of the synovial membrane, the scrofulous affection having its origin in the bones; a painful nervous affection occurring in hysterical females; and certain affections of the sciatic nerve.

The principal *diagnostic* mark is the pain which is experienced at the beginning, unattended by swelling, and which is invariably increased by pressing the articular surfaces one against another. The pain is referred to the point which is the actual seat of the disease. Whatever joint is affected, the formation of abscess is always attended with an aggravation of the symptoms; but the degree in which the general system is disturbed when suppuration is established, depends on various circumstances—the age, the power of the patient, size of the joint, and its situation. In its progress the disease is generally tedious.

The *prognosis* is always unfavourable, for at its commencement the disease is frequently mistaken, and it rapidly brings about structural change in the constituents of the joint.

Treatment.—It is of course important to attend to the patient's general health. Undoubtedly there is no medicine of which it can be said that it exercises a specific influence over the disease; but Brodie cannot doubt that a course of sarsaparilla properly prepared and administered in full doses, is often productive of the greatest benefit. When the cartilages of a joint are ulcerated, it may well be supposed that the motion of their surfaces on each other must be favourable to the progress of ulceration. "I have known some cases in which rest alone was sufficient to produce a cure." I have employed caustic issues, and seen them employed in a great number of cases, and have found them usually to be productive of singular benefit when the cartilages are in a state of ulceration. Blisters and setons seem to act nearly in the same manner as caustic issues. Local and general bloodletting is in an early stage of the disease productive of advantage, and in the same stage the warm bath will be found serviceable. Friction is invariably injurious.

Scrofulous disease.—In scrofulous disease

of joints, the cancellous structure of the bones is the part primarily affected, "in consequence of which ulceration takes place in the cartilages covering the articular surfaces." The cartilages being ulcerated, the subsequent progress of the disease is in many respects the same as when the ulceration of the cartilage takes place in the first instance. I apprehend many of these cases in which the texture of the bones is softened, and yellow cheesy substance was deposited in their cancelli, were cases of tubercular deposition, such as I have already described. "This disease is frequent in children; rare after thirty: it may affect several joints together or in succession: it is rarely met with except in persons who have marks of a scrofulous diathesis. It is not unlikely to be confounded with ulceration of cartilages. Before the disease has extended beyond the cancellated structure, or any swelling is apparent, pain is experienced; generally however it is not severe: after a time parts external to the joint sympathise; tissues become infiltrated, and the joint appears swollen; the swelling is puffy and elastic. If no suspicion of disease existed before, it is always awoken by the swelling. It increases, but not uniformly, and especially after exercise. As the cartilages continue to ulcerate, pain is aggravated, but is not severe until abscess has formed: the abscess bursts, or is opened, and thin curdy pus discharged; it becomes gradually thicker, and very closely resembles the cheesy matter of scrofulous glands; other points give way, and continue fistulous. It may remain so for months without occasioning much disturbance: in some cases hectic comes on, and unless the limb be amputated the patient sinks; at other times the sinuses close, the œdema subsides, and the patient ultimately recovers with or without ankylosis.

Treatment.—In treating this condition it must be borne in mind that the system is at fault, and therefore general is almost as necessary as local treatment. I cannot say that the abstraction of blood from the part is never useful, but certainly it is seldom necessary. If there be an accidental supervention of inflammation, leeches and cold lotions may be employed with advantage. It rarely happens that good is obtained from blisters or liniments, or counter-irritation. I much doubt whether setons and issues are ever useful, except there be great pain and spasm. There is, however, one rule respecting local treatment, which is applicable to all cases, and which can never safely be disregarded. The diseased joint should be kept perfectly quiet, because motion is likely to promote ulceration, and hasten the formation of abscess. During the formation of abscess, fomentations and poultices should be used

to relieve pain. When, after the formation of several abscesses, the disposition to suppurate lessens, anchylosis, as a curative process, is about to commence; circular pressure around the limb will then be useful. As to constitutional treatment, a residence on the sea-coast is desirable; the diet should be plain, but nourishing. It appears to me preparations of steel are more useful than any other medicines; they must be continued, with slight intermissions, for a long time, until their exciting action may render it prudent to suspend them. In some cases, the liquor potassæ, with bitters, is useful; in others, iodine and its compounds will be found to act beneficially. When the organization of the joint is destroyed, and the health is failing, recourse must be had to amputation.

In the preceding description of articular inflammation affecting severally the tissues of a joint, I have adhered as closely as was compatible with the necessary condensation to the text of Sir B. Brodie, except as will have been seen, questions have arisen, as in ulceration of cartilages.

There are two joints where these affections are often seen, and where a more detailed consideration is necessary—the hip and the knee.

COXALGIA OR MORBUS COXARIVS,

is a complex affection of the hip joint, the nature of which is not unlike the so-called *white swelling* of other joints. Hippocrates speaks of it, (Aphor. sect. 6, Aph. 59 & 60;) and he even knew the actual cautery used for its cure. Asclepiades, the Bythnian, also speaks of two cases in which dislocation had occurred: Galen believed it to be owing to a relaxation of the ligamentum teres. The Arabs seem to have had more definite ideas of the disease. Albucasis points out a cause, which was indicated afterwards by Petit, in the first work of any importance on the subject: the Arab says that it sometimes happens that mucus accumulates in the hip-joint and causes luxation. We recognise it by the increased length of the diseased limb, and the void which is observed at the displaced point. Petit is the first person who well described the disease. It particularly affects children from three to fourteen, yet it may be seen at an earlier period: Camper has often seen it in children of eighteen months; Morgagni at a still earlier period; and Richter gives cases in which the disease was congenital. But it may be developed during adult life. Fieker met with it in a person of thirty-eight; Albers in one of forty-five; Paletta and Kraack in men of fifty.

The disease usually begins by a pain in the hip; more or less acute if it succeed to a blow over the trochanter; dull and deep

seated when not excited by accident; sometimes only felt at intervals, at others having an erratic, rheumatic character. It increases, however, becomes more fixed, is felt above or below, though sometimes at the level of the articulation, sometimes in the groin; it is increased by pressure and motion of the limb, and it is then usually very acute. Sometimes it is felt at the knee or along the whole limb. The pain at the knee or the ankle is often so severe as to mask the hip disease. The sign which Boyer pointed out, “that pressure on the knee does not increase the pain,” is, I believe, a theoretical idea, for instances to the contrary are often seen. The absence of tumefaction at the knee is not always a distinguishing sign. The pain is often accompanied by contraction of the flexor muscles, so as to oblige the patient to walk on his toes. There is usually developed about the same time a fulness of the superior part of the thigh. Still, although the patient is lame, there is no very decided change in the length of the limb; and it is not easy to state upon what this lameness depends: to a certain extent it may be owing to feebleness of the limb; to some extent to pain. If at this time the two limbs be measured, we shall probably find the diseased limb a trifle the longer.

Such are the three principal characters of this period of the disease—pain, elongation of the limb, and lameness. To these a new series of symptoms succeed: the elongation is replaced by a shortening, varying in extent with the age of the subject, and to circumstances to which we shall presently advert. The shortening is accompanied by all the symptoms of luxation upwards and outwards; that is, the knee and foot are rotated inwards; the great trochanter being directed upwards and forwards. It may occur suddenly: thus Desault has seen shortening occur to the extent of two inches in a single night. In many cases the great trochanter is drawn upwards by the glutæi muscles; then the shortening supervenes without any change in the direction of the limb. Again, in some cases there supervenes suddenly an elongation or increased elongation of the limb, sometimes assuming the appearance of luxation into the foramen ovale, by the contraction of the pectinæus and other muscles.

Inflammatory action goes on, and pus is formed in and around the articulation; it approaches the surface, and points. We recognise it by the more defined tumefaction, diminution of pain, and fluctuation. The most common situation of purulent collections, is the external part of the thigh; sometimes they are seen at the internal surface. When they are marked by in-

flammatory symptoms, they usually point in the buttocks. According to Dzondi, it is at this time the acute pain at the knee is felt. Whether we open these abscesses, or leave them alone to break, they pour out ill conditioned pus. The openings often close after a short time, and new ones are formed and become fistulous; the patient becomes emaciated, and sometimes sinks under the severity of the pain and the abundance of the suppuration, which produce hectic fever and death. I should mention that cases have occurred where abscess and death have supervened without any change in the length of the limb. In those cases Boyer believed that caries was limited to the circumference of the cotyloid cavity.

If we have opportunities of examining the bodies of those suffering from this disease at an early period of its existence, we shall find the soft parts external to the joint infiltrated with purulent serum; here and there it is collected in the form of abscess. Sometimes these collections are considerable before any external opening has been formed; the muscular tissue, through which this fluid is disseminated, is much changed, and the aponeurosis is perforated. If the abscesses have burst we shall see fistulous canals extending to the joint, the original seat of irritation. The articular capsule is often partially destroyed; sometimes it is not perforated; and there is occasionally a communication established by the breaking down of a part of the circumference of the cotyloid cavity. The fatty matter, termed synovial glands, and found at the fundus of the cavity, sometimes becomes tumid, and expands to such an extent as nearly to fill the cavity. The ligamentum teres is sometimes strained and elongated, but more frequently completely destroyed; the same fate attends the periosteum covering the neck of the femur and the border of the acetabulum. The cartilages covering the head of the femur and the cavity of the acetabulum are thickened and softened, according to some; strained and destroyed, according to others. However, we frequently find bones denuded, and, consecutively, caries is often developed in the contact with pus. Sometimes caries affects the fundus of the cavity, and the purulent matter may find its way into the pelvis; may even perforate the organs contained there. Sir A. Cooper refers to two cases in which it had found its way into the rectum. Often the head of the femur is the principal seat of alteration; at other times, in the midst of much disease of the cavity, it is little affected.

The relations of parts seem to be changed by the destruction of parts; the femur, shortened by the alteration of the head, sinks deeper into the cavity, also hollowed

by caries, so that the occasional shortening may be thus explained: indeed, Larrey believes this to be the ordinary explanation of it, and that displacement is exceptional. However, we find the head of the bone in the iliac fossa with sufficient frequency to establish that as a not very unfrequent cause of shortening.

When the bone is displaced, the limb shrinks; the muscles are enfeebled or atrophied by want of use. Nelaton believes that this atrophy is accompanied by a decrease in the length of the femur: this atrophy, which does not confine itself to the femur, but to a certain extent affects the leg, must not therefore be forgotten in making out the cause of shortening. Petit attributed this dislocation to an accumulation of synovial fluid, which distends the capsule, causes pain and relaxes the ligaments, so as to render them unable to resist the tendency to displacement upon motion. Sabatier, Desault, and Boyer, denied this dropsy, which they had never seen, but which others have. A case is described by Lesauvage, of Caen, in the *Archives Gen.* 2de serie, tome 9, which directly supports Petit's opinion: a case is also mentioned by Brodie. Those who do not deny the existence of dropsy of the joint, yet say, while the accumulation is going on there should be lengthening up to the moment of displacement, when the limb would be drawn up by muscular action. There can, however, be no question, I apprehend, that lengthening of the limb does occasionally happen, but I believe Sir B. Brodie's explanation will account for many cases of apparent lengthening. He believes that in all cases the lengthening is only apparent, not real, and that it is caused by obliquity of the pelvis. The body resting on the healthy side, the pelvis of that side becomes elevated, and the other side proportionably depressed. The inclination of the pelvis is necessarily accompanied by a lateral curvature of the spine, and then one shoulder is higher than the other. All these symptoms may disappear at the end of a few weeks, if the horizontal position be preserved, unless the deformity have existed long, and the patient be young. From this direction of the hip, an apparent lengthening of the limb is the necessary result. He believes that the shortening which is sometimes presented at an early period has nothing real in it; but putting aside both shortening and lengthening, he believes the disease to be an inflammation of the synovial tissue of the joint, or a scrofulous affection of the bone itself; that its most frequent cause is primary ulceration of the cartilages, progressive destruction of the osseous surfaces, and, as a consequence, a true shortening. Boyer admits as probable, that at the commencement of the

disease the cartilage which lines the cotyloid cavity, that which covers the head of the femur, the ligamentum teres, and the so called synovial gland, are tumefied; that this tumefaction, by destroying the proportion which ought to exist between the diameter and depth of the cavity and the head of the femur, produces that elongation which he thinks is almost always observed at this period. He mentions the case of a person who died from the consequences of luxation, consequent upon contusion; he discovered that the displacement resulted from the cartilaginous surfaces; that this tumefaction had almost effaced the cotyloid cavity, and elongated the head of the femur. The etiology of Petit having been abandoned, many persons have inclined to the opinion that luxation is commonly produced by inflammatory tumefaction of the diarthrodial cartilages, the synovial apparatus, and the ligamentum teres. Among the supporters of this opinion are Schwenke, Gorter, Vermandois, Van Swieten, Camper, Callisen, Plenck, Dehaen, Portal, and Boyer. If we find sarcomatous masses in the cotyloid cavity, certainly the displacement is easily explained. Yet these sarcomatous masses, and even the tumefaction of cartilages and the synovial apparatus, are not constantly met with, even after the dislocation has been effected. I recollect a case in which the head of the femur was entirely carious, and smaller than usual; it had escaped from the acetabulum and rested on the descending ramus of the ischium; there was no trace of round ligament, but the cotyloid cavity was very little changed. Observations like that induced Rust to seek other explanations; he sought to prove that the disease begins in the head of the femur; that it commences with inflammation of the medullary membrane, with a tendency to ulceration; that it ends by degenerating into a deep-seated central caries, and that this caries extends from the centre to the circumference; that at a later period the head of the femur, enormously swelled, obliges the great trochanter to direct itself downwards and outwards; that an elongation is thus produced, which may extend to four inches. At other times, on the contrary, the muscles draw the head upwards, as it is expelled, producing a shortening which may cease at intervals, and is never so complete as that which supervenes as a consequence of consecutive luxation. He adds, that if post-mortem inspections do not always support this view, it is because in those cases inflammation and caries of the cotyloid cavity were the consequences of disease previously existing in the pelvis.

A careful examination of a large number of specimens preserved in museums has

convinced me that the head of the femur is more frequently diseased than the cotyloid cavity: the head of the femur may unquestionably be attacked with central caries, and this caries may extend from the centre to the circumference. Still, I am far from thinking that the theory of Rust applies to all cases of hip disease. Caries of the head of the femur, or of the cotyloid cavity, only belong to one variety of the disease. How does the theory of Rust explain the dislocation, when the head of the femur, instead of being larger, is smaller than natural? atrophied. Berard saw the case of a grandson of Condoreet, in which the head of the femur on the diseased side was more than a third larger than the healthy one; the acetabulum had enlarged to contain it, and the articular cartilages were healthy. Dzondi, admitting the correctness of Boyer's reasoning as to lengthening, which he believed to be constant in the first period of the disease, maintains that the disease is always caused by rheumatic irritation, affecting the external surface of the capsule as well as the fibrous tissues connected with it, as well as the periosteum which surrounds the cavity and the superior part of the femur. Fricke maintains that two diseases have been confounded under one denomination: the one coxalgia, caused by relaxation of the muscles without disease of the joint; the other, a true inflammation of the articulation. In the first, elongation is constant; in the second, there is acute pain; and to ease that pain, there is vigorous muscular action, by which the head is firmly pressed upon the cavity so as to create a shortening.

In all these explanations two things must not be confounded, the facts and the explanations. Brodie, Bichat, and Rust's observations are incontestable, though different—but are their explanations equally incontestable? My own opinion is, that the lesion is complex, and, therefore, that the appearances upon examination are not identical. Now, with respect to the pathognomonic symptom, lengthening, it is certain that since attention has been directed to the inclination of the pelvis, it is rarely met with: we are, therefore, bound to admit that former observers overlooked the circumstance. It is clear, then, that the elongation of the first period may be simulated, by the depression of the pelvis on the diseased side; or being real, the cause remains to be determined; that in the second period the symptom may be real, and a consequence of luxation into the foramen ovale; that the shortening in the first period may be simulated by the elevation of the pelvis on that side or it may be real, and be owing to muscular contraction, which draws up the head of the bone, pushed out of the cavity,

by an accumulation of synovia, the tumefaction of the soft parts within the articulation, or other cause; that in the second period it is owing to the destruction of the articular surfaces; to a displacement into the iliac fossa, or, according to Dzondi, to a change in the direction of the neck of the femur. Many or all these causes may concur to produce this effect; for instance, we may find, in the same case, atrophy of the limb, ulceration of the articular surfaces, and a vicious inclination of the pelvis.

In making an examination for the purpose of determining whether there be any change in length, there are three positions in which the patient may be placed; first, lying on the back; then we put our thumbs on the anterior and superior iliac spines, mark their relation to an ideal horizontal line, and draw similar lines at the knees and the ankles. Sanson proceeds in the following way: from the upper part of the sternum he drops a line which represents the axis of the body; from one iliac spine to the other he draws a tape, which crosses the first: if the two spines be on a level, these tapes will fall perpendicular the one to the other; if, on the contrary, one hip is higher than the other, the angles will be unequal, and the most obtuse will be on the side where the hip is depressed. Brodie's method is, I think, hardly so exact as Sanson's: he extends the tape from the iliac spine to the superior margin of the patella of one side and the other. In case of elevation or depression of the pelvis, despite apparent change of length, the measure will be the same on both sides. Dzondi made the patient sit upon a chair, so that the lower part of the back shall touch the seat; the legs are carried forwards parallel to each other; the transverse line of the pelvis making a right angle with the thigh. At first he compares the two knees, then raising at the same time both feet, and flexing them strongly, the legs being in a right line with the thighs, both heels are then compared, and if they pass each other the case is clear. Whatever may be the advantages of examining the patient sitting and lying, the erect position is unquestionably useful; it enables us to judge of the inclination of the spine and the pelvis, and to observe the character of the buttocks, a matter of first rate importance; for, certainly, one of the most common signs of ulceration of the cartilages is a remarkable flattening of the corresponding buttock, which becomes flabby, and looks for this reason larger than that of the opposite side, though, usually, in reality, it is not so. This appearance seems to be owing to a falling away in the firmness and vigour of the glutei muscles; it is upon this sign that Brodie mainly relies, in determining whether the condition be one of ulceration of

the cartilages, or inflammation and tumefaction. But I do not think that this symptom can be relied on, to distinguish between these two affections. Again, Brodie relies upon the character of the pain, which according to him, is less acute in inflammation of the hip joint, and is not accompanied by the excruciating pain which accompanies ulceration of the cartilages; but of the decided value of this symptom I doubt. Still, I think the pain ought to be attentively considered; it is often only evident upon pressure, yet the absence of pain is not sufficient to affirm that there exists no alteration of the hip, for in some cases it is wanting.

It is important to consider what are the affections which we may confound with spontaneous luxations of the femur. I do not think it necessary to do more than caution you against confounding this disease with fracture of the neck of the femur, of the crest of the ilium, or luxation of the femur, though doubtful cases will occur; nor with congenital luxation: in that, lameness is coeval with the attempt to walk, and there is no pain. It is not, however, easy to distinguish this affection from certain chronic diseases. The pain in the knee may induce error, even when it is associated with pain in the hip, and change in the length of the limb; it may often induce mistake: it may be taken for disease of the coxo-femoral articulation, when it only affects the sacro-iliac symphysis. Again, it is not always easy to distinguish between coxalgia and rheumatism of the hip: indeed, the distinctions are not defined: the erratic character of the pain which, before affecting the hip, may have visited other parts, is an important sign; and may not rheumatism impress disease upon the synovial, fibrous, and osseous tissue of the hip? Again, sciatica is usually sufficiently marked by the course of the pain. Chronic suppuration developed in the vicinity of the hip, in consequence of caries or necrosis of the great trochanter, or of the crest of the ilium, should be distinguished from those which are a consequence of coxalgia; by the smaller quantity of pain attending motion of the thigh, and the absence of remission during repose; suppuration of psoas, presenting at the external part of the thigh, by the symptoms of psoas abscess, and by the absence of pain when the head of the femur is pressed down. Still difficulties will arise, such as when a chronic abscess opens into the acetabulum, either by perforating the fundus of the cavity, or in any other way.

There is nothing fixed or certain about the progress of coxalgia; it is sometimes very rapid, passing through all its stages in a few weeks; sometimes it may drag on

through months, or even years. The first period extends from the beginning of the disease to the displacement of the head, and is usually as much shorter as the disease has been excited by external violence, as it is more painful, and as the patient is more vigorous and plethoric. In children, it is usually rapid; possibly because of the comparative shallowness of the cavity: but where they are scrofulous, it may be prolonged for many months. It is, during this period, that we may hope to arrest the progress of the disease: we may see then the elongation, simulated or real, and the pain, disappear, and motion of the limb becoming practicable; yet there usually remains a certain rotation of the limb outwards.

The examination of a limb, made long after the cure, does not ordinarily shew any lesion; sometimes the diarthrodial cartilage is replaced by a complete eburnation of the osseous surfaces. During life, this eburnation is proved by a shock, experienced during the movement of the limb by the patient, and even perceptible to a bystander.

If medical assistance have been obtained too late; if by the carelessness of the patient, or the rapidity of the disease, it have been impotent, and displacement has occurred, the affection may proceed no farther; a false joint is formed, and the patient cured; presenting, as the case may be, a lengthening or shortening of the limb. This termination is not, however, the most common; oftener the pain persists, abscesses are formed, and fistulae established, the patient sinking under the disease. This duration of the period is very variable; it often extends to a year before death; sometimes even then the fistulae may close, and the limb become ankylosed: but, if this result is probable, care should be taken about the position of the limb. It is, therefore, evident that, in a case of this kind, the result must be very doubtful: it is also very uncertain what course a displacement may take.

If we examine the hip after a cure by ankylosis, we find the femur united to a point of the iliac fossa, or the cotyloid cavity: sometimes it forms a right angle with the trunk; sometimes it is parallel with the axis of the body, and the union is effected as in other cases of ankylosis.

After the cure by pseudo-arthritis, or false joint, we find, on the place where the femur rests, a depression; at the same time the head of the femur is diminished in size, and is flattened, so as to have contact with the ilium by a larger surface. The new joint is supported by muscular fibres, which take a fibrous appearance; the whole limb is atrophied, as a consequence of long inaction.

A point of great importance in the prognosis of this disease, as a means of determining whether any mode of reduction should be employed, is to ascertain what is the state of the cotyloid cavity. The generally received opinion is, that it becomes effaced, filled up, either by the tumefaction of the soft parts it contains, or by the production of exostosis. Boyer thought that the cavity abandoned by the head of the femur is more deformed by the pressure which the bone exercises on it from without inwards than by any other cause, but that the cavity is usually preserved.

There is much difference of opinion as to the causes of the disease. Some authors, with Petit, regarding it as the result of external causes—a fall upon the trochanter; others denying this cause in any case, and believing that this disease is always caused by constitutional means. I think there can be no doubt that constitutional causes exercise greater influence upon the development of the disease than those of an occasional nature; at least, they favour the action of the accidental cause: it is, however, true that a fall upon the great trochanter, the knee, or even the foot, the leg being in extension, frequently excites all the symptoms of the disease we are considering. Usually, however, no sufficient cause can be assigned for the existence of the disease. Some persons believe a scrofulous disposition to be the cause; others, rheumatic irritation: this Dzondi strenuously maintains. Larrey regards the disease as scrofulous in the earlier periods of life—rheumatismal in adult life. There are other debilitating causes, to which some men have given weight as occasional agents, masturbation, venereal excesses, arthritic diathesis, syphilis. Again, certain eruptive affections would seem to excite the disease; measles and small-pox; it sometimes follows bad fevers, parturition, and other causes.

Treatment.—This disease not being always identical in its nature or its progress, it is evident that its treatment cannot be identical; that it must be varied, not only with the periods of the disease, but with the nature of the cause, the constitution of the patient, and the intensity of the symptoms. I believe nothing to be of such paramount importance as absolute rest, prolonged through the treatment; and after the cure, or we may run considerable risk of relapse; but essential as this is to the success of the treatment, its attainment is not always easy: either we have to contend with the indocility of a child, or with the feelings of friends, who will not make up their minds to such a long confinement, for what they think a comparatively unimportant disease. Again, if

the limb be secured effectually, the ennuis of a child is often distressing. In consequence of this, many modes have been proposed for the purpose of obtaining the same result: by fixing the patient on a mattress, and when it is necessary to move at all, moving the entire trunk by means of a rope hanging from the bed head, the limb itself being rolled with junks, but I think the long splint is most effectual. When we have reason to expect a constitutional origin for the disease, the constitution should be modified by appropriate means. Bearing that in mind, the acute local symptoms which are often seen, should be energetically treated by antiphlogistics: they ought to be employed with a vigour proportioned to the intensity of those symptoms. The disease being set going by violence, the patient vigorous, the pains very acute, blood may be taken from the arm, and leeches or cupping glasses repeatedly applied to the part: at the same time the diet should be low. Baths have been recommended very strongly by Dzondi, but there is a serious objection inseparable from their use—motion of the limb. In fact, at an early stage of the disease, he holds that baths, hot flannels, a small blister just below the trochanter major, and tartar emetic, combined with opium, will cure nine cases out of ten. I apprehend, however, that the cases to which he alludes are the rheumatic ones. When inflammatory action is lessened, if the pain still persists, though blunted, revulsives should be employed around the joint; they may be applied at first if the disease be chronic. Among these agents we generally use tartar emetic ointment, croton oil, blisters, setons, moxas, caustics, and the red-hot iron. Boyer employed a succession of blisters, placed upon the anterior, superior, and external sides of the thigh. These are used so long as the pain is present. He was accustomed to apply, in succession, from three to a dozen; sometimes, at first, they will be very beneficial, and then suddenly will seem to increase the pain of the articulation; they should then be suspended, and antiphlogistics should be substituted for them until the new irritation subsides. Some surgeons prefer to a succession of blisters a less effective plan, a single one, upon which they keep up suppuration by means of savine ointment; some prefer a seton external to the aponeurosis of the thigh; this often lessens the pain in the knee, which is occasionally very distressing: this seton should be large, and placed over the tensor vaginæ femoris muscle. Cauteries are also applied around the joint, but though more powerful in their effect than blisters, they cannot be

compared to moxas: those should vary in size with the age of the patient. When the eschar is detached, it may be dressed with some stimulant to keep up suppuration. As soon as one is about to cicatrise we make a second, a third, and so on until the desired result is obtained. Professor Rust holds that none of these agents can be compared with iron, heated to whiteness; he does not, however, use it in acute cases until after blood-letting. He heats the iron or irons (for he employs as many irons as he requires lines) to whiteness; the cauterising extremity is three inches long by nine lines broad, and in form like a reversed prism. If the patient be young, three rays are enough; if older and vigorous, five; these rays converge from above downwards, and are placed an inch distant from each other. The first passes through the centre of the buttock for six inches, and in the direction of the sciatic nerve; the second is not so long, it follows the depression which the trochanter major leaves behind it; the third may pass over the trochanter itself. They should remain in contact with the integument some seconds whenever we wish an eschar of a certain extent. Rust, who admits a constant elongation of the thigh, states that he has observed often after the employment of the cauteries, that the limb resumed its natural length. There can be no question of the great efficacy of this treatment in a large number of cases. Still, as it is more painful, and the patient's fears are alarmed by it, it may be a question whether we should use it before the failure of moxas; and these even should not be used until milder means are tried. Certain it is, however, that transcurent cauterisation and moxas are the means to be employed in the last period of the disease; the effects must be maintained by rest as absolute as can be obtained, the limb being extended. When abscesses are formed and opened, the cure is rare, especially where the abscesses are large; still it is not impossible. It is much more unfrequently that such abscesses disappear without opening, or are followed by cure. Again, it is to moxas that we owe such cures, but then they must be applied in much greater numbers than in the first period. Larrey has applied with success as many as twenty in a period of between fifteen and sixteen months. We may also use with success very large blisters, such as have been recently recommended by Velpeau. If, however, the abscesses present an acute character, antiphlogistic means must be used, and it may be necessary to open them to lessen the irritation. If the abscess seems to be caused by caries, if counter-irritants do not repress it, an opening must be

made, but as to the time and mode of doing so, much difference of opinion exists. Some persons who are strongly impressed with the bad consequences produced by purulent collections, recommend an opening to be made as soon as the formation can with certainty be detected; most men, however, wait until the quantity of pus collected is very considerable, raising the skin and producing pain. As much inconvenience would attend one course as the other; if opened very early we give counter-irritants no chance to excite the absorbents; if left to collect in great quantity, the muscles are damaged, the integument is thinned, and the chances of cure remote, whether it be left to open itself or it be done artificially. We usually open them by a simple puncture, either with a trocar or a bistoury; in the latter case with or without a valvular opening: the opening is closed by means of adhesive straps, the puncture will commonly have to be repeated; at last it remains fistulous, and the patient sinks under the profuse suppuration and accompanying hectic. The hectic is attributed by some persons to the contact of air with the interior of the abscess; by others it is maintained that it occurs more quickly if we largely open them by means of the potential cautery and the bistoury. Rust believes that whether the opening be large or small the same quantity of air is admitted. To avoid these effects, he recommends that before opening an abscess, we should strongly irritate the skin which covers it, by passing over it, two or three times, a red hot iron; and when the tension and pain caused by the burn are passed, we incise one of the eschars through its whole length, for the purpose of evacuating the fluid. In this way, he seeks to produce an inflammatory condition, analogous to that which nature sets up before an abscess is opened spontaneously, and which favours the tendency of the parietes to coalesce when the pus has escaped, and produces in them a state predisposing to adhesion. When the abscess is very large, and the patient very feeble, he passes the trocar, heated to redness, through the tumor, carries a seton through the openings, and leaves it there thirty six hours. Larrey follows the method of Petit, of Lyons, opening the abscess by a small knife heated to redness, and afterwards applying the cupping glass. Whatever method is adopted, the result is often fatal; occasionally, the suppuration lessens, the fistulæ are healed, and the case does well. Whatever may be the period of the disease when the cure is obtained, or the means by which it has been brought about, great precautions are neces-

sary to prevent relapse; the horizontal position should be long maintained, and when the patients get up they should move about on crutches; and much care must be devoted to the first attempts to rest the body on the diseased limb. Such are the means which may be employed in the treatment of coxalgia: these means may often succeed in the first period, rarely in the second; indeed, until of late years, the efforts of the surgeon were limited to obtain a cure by ankylosis, or, in a still more favourable case, to the formation of an artificial joint. Certainly, when caries is extensive, the most favourable termination that can be looked for is ankylosis, the limb being in extension; otherwise the limb will not only be useless, but inconvenient.

Dislocation, by these means, has until lately been deemed incurable, and the patient has been doomed to perpetual lameness. In 1835, Humbert, after maturely examining the condition of the limb, became convinced that the cotyloid cavity persisted, that its contraction was inconsiderable, that the new adhesions formed with the head of the femur might be destroyed; he proposed that attempts should be made to reduce the luxation: those attempts were made, and were successful. In six cases, after graduated extension, maintained during a time varying between five days and several months, he has procured reduction; but when reduction was accomplished, no relaxation of the extension was permitted for many days, indeed, not until the parts were supposed to be accustomed to their restored condition, and then only very gradually. This reduction, however, does not appear to bring the limb to its proper length on all occasions: disease of the spine or deformity of the pelvis may be the cause of this, and there may be atrophy of the limb, which will be incurable, but the patient may be able to walk without difficulty. In speaking of congenital luxation, this point was considered.

OBSERVATIONS

ON

THE VARIOLÆ VACCINÆ.

BY ROBERT CEELY, ESQ.

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[Concluded from page 687.]

Varieties, Anomalies, and Analogies.—Although the medical observer, practically acquainted with the varieties and anomalies of the vaccine disease in man, will

neither be much surprised nor long perplexed at less obvious though strictly analogous occurrences in the cow, yet there are some particulars connected with this part of the subject which appear to me not unworthy of remark.

The normal course of the natural and casual disease is completed in about twenty or twenty-three days, viz., four days, in the natural form, from the probable period of invasion (in the casual, three or four from the presumed period of incubation,) to the appearance of the eruption; six or seven from this period to the full development and perfect maturation of the vesicle; five or six from its decline to perfect desiccation; five or six from this period to the spontaneous separation of the crust, and the formation of the cicatrix. Irregularities, however, both real and apparent, are observed. In the natural disease the first two stages often seem materially abridged. In the casual the first seems prolonged, and the second proportionately abridged; or the first is prolonged, and the second and subsequent stages are normal. In both forms the third stage seems often abridged, sometimes prolonged. Lastly, the eruption is not always simultaneously developed. All these irregularities do occur, some more frequently than others; but some of them are very often merely apparent anomalies.

It will frequently appear, from the representations of the milkers, that the eruption in both forms of the disease reaches its acmé in four days; and this would be perfectly correct if we could admit that the period of detection was coeval with the period of eruption; but in very few instances, on their parts, does this appear to be the case. It has been already stated that these men rarely, if ever, detect any precursory fever; they often disregard the first occurrence of topical heat, and as seldom notice the first period of papulation. Nor is this in the least to be wondered at: it is, in truth, very difficult for an experienced observer at all times to escape error in this latter particular, and oversights will occur to the most vigilant from various causes, especially from peculiarity of colour, vascularity, and texture of skin, as well as temperament of the individual. It is indeed surprising, at times, to observe with what suddenness and rapidity the second stage appears to be completed, seeming scarcely to occupy more than three or four days. In this, of course, we see nothing more than what is occasionally observed in man from various causes. Greater difficulty in detecting the commencement of papulation in the cow, however, is the fruitful source of apparent anomalies of this kind; but vigilant observation, I am persuaded, by leading to the earlier detection of the obscure indications

of this stage, will materially diminish their number. Topical heat, slight discoloration, slight tenderness, some induration, will often exist three or four days before any well-defined circumscribed tumefaction is perceptible. When the corium and epidermis are thin and vascular, the pigment not very dark, and the examinations are carefully and repeatedly made in a good light, the respective stages are better observed, and fewer irregularities are apparent. Although the exact period of incubation of the casual disease cannot always be positively determined, yet there seems good reason to believe that it is occasionally prolonged from five to eight days, the subsequent stages being perfectly regular.

The abridgment of the third stage, or the too early appearance of turbidity in the lymph, or the premature occurrence of vesicular desiccation, and the circumstances upon which these and other real and apparent anomalies depend, are well deserving of consideration. In order that they may be more correctly appreciated, and better understood, it seems necessary to furnish an analysis of the principal phenomena of the eruption in connection with some of the varied circumstances under which they arise; and this I shall proceed to attempt, although it must necessarily involve some repetition, which to many, I fear, will prove tedious, and be deemed superfluous. The eruption commences in papulæ, which have their seat in the corium. They are not always simultaneously developed, either in the natural or casual form. In size and colour the papulæ differ according to their age, the thickness and colour of the skin. In thin, fair, and vascular skins, at a very early period, they resemble flea or bug bites, and are of a deep rose red; they become in a day or two as large as a pea, and have frequently a dark damask or even livid hue; which gradually diminishes as they acquire their vesicular character. In very dark skins of this texture, at this period some degree of redness, a coppery-reddish brown, or a tawny hue, is observable. In thick skins, though fair, the colour is much paler, and is, of course, sooner lost. In dark thick skins, and even in flesh-coloured skins, if very thick, the red colour is often entirely wanting, or is scarcely appreciable. Here, therefore, the papulæ are seldom noticed till they have acquired the size of a vetch or a pea. They feel hard, raised, more or less round, are hot and tender. Many of these varieties may occur at the same time in different parts of the same animal,

In three or four days from their first appearance, the papulæ acquire their vesicular character, and have more or less of

central depression: continuing gradually to increase, in three or four days more they arrive at their fullest degree of development, and sometimes are surrounded with an areola, and always imbedded in a circumscribed induration of the adjacent skin and subjacent cellular tissue. The first change in the pimple is indicated by the appearance at its apex of a dull or dusky yellowish point; the circumference gradually increases in substance and extent, and the centre becomes wider and deeper; at length a flattened vesicle is formed, with a dimple or depressed centre. The degree of central depression differs not only in different stages of the vesicle, but also in different animals, and in different parts of the same animal at the same time. It is in general more considerable about the fifth or sixth day of its formation. In very fair skins, (especially on the udder,) just before the appearance of the areola, and in very dark skins of a slate, blue, or black colour, where no areola appears, the depression is better felt than seen; but in the former a dirty ochre or dusty spot in the centre is rarely ever absent to aid the eye. The depression is sometimes wanting in some small vesicles on the teats at their early stage; but it appears in the middle or termination of their course, and is again entirely lost. An anatomical examination of the structure of the vesicle, just before it attains maturity, shows that its colour, indurated margin, and central depression, depend on the existence of an adventitious membrane formed in the corium and secreted by the papillæ. It is raised in the form of a zone, and is intimately connected with the epidermis. It has cellular structure, in which is secreted and contained a clear viscid lymph. The cells appear to be arranged in two concentric rows, and are separated from each other by whitish radiating partitions, which, at their converging extremities, are united by a central membranous band. The dusky central spot which marked the first change of the pimple into the vesicle, and which has now become darker and more distinct, seems to be caused by a greater or less degree of separation and desiccation of the epidermis, stretched over a crypt-like recess, which contains a small quantity of semi-concrete lymph-like matter, occasionally a turbid opaque fluid. This cellular, adventitious, membranous conformation, though differing in texture and amount in different vesicles, is invariably present, and is not less essential than diagnostic. About the fourth or fifth day of the eruption, or two days before the decline of the vesicle, there often appears at its base a red circle, which gradually increases in extent till that event

occurs. During this period the lymph within the cells, having become more abundant and less viscid, and somewhat opaque, bursts and breaks up the cells and their connecting band, separates the epidermis from its attachment to the subjacent adventitious membrane, and the vesicle, losing its central depression, becomes more or less acuminate, presenting a conoidal or semi-globular form. The lymph soon acquires a pale straw colour or light amber hue, and speedily becomes more serous, turbid, and opaque. Acumination of the vesicle, however, is not always confined to this period. It takes place earlier, later, or never occurs. It is earliest in small, comparatively superficial vesicles, which seem to resemble the supernumerary vesicles in children; is later in thick skins, not very vascular, being postponed till the tenth, eleventh, or twelfth day of the disease. It is earlier on the teats where the cellular tissue is more lax, than on the udder, where it is more compact. There are different degrees of acumination: in some vesicles it is barely visible, especially on the udder; but on the teats it is very often strongly marked.

The quantity and quality of the lymph varies, not only at different stages, but also in different parts of the same subject. It is generally more abundant and less viscid on the teats than on the udder; more copious commonly in the cow than the heifer. In the early stages of some vesicles, chiefly those which are comparatively superficial, and often others which have been irritated, the lymph is occasionally turbid, and even bloody, without any impairment of its efficiency. In these vesicles, too, are often observed pustular or vesicated margins, analogous to those seen in the puffed irregular vesicles of adults, or the vesicles of irritable habits, either with or without local irritation. They are more apt to occur on the teats, but happen in thin skins, or on the udder, from the slightest irritation. Here the cuticle appears sodden and rumpled, and is soon removed. A premature decadence of the vesicle sometimes occurs from an accidental escape of its contents; it is then covered with concrete lymph. An irregular escape of lymph will give rise to alternate decline and revival. When the escape is slight and progressive, it constitutes another form of vesicle—the vesicle with a central crust, which, being liable to be mistaken for a desiccated vesicle, deserves notices. This vesicle or “vesicular tumor” assumes its characteristic form at various periods, most commonly at an early stage. It depends generally on a deep fissure in the epidermis and corium, through which the lymph slowly oozes, and concret-

ing, exhibits a central crust. The fissure may not have completely closed before the formation of lymph: it may have re-opened during any part of that process, therefore the characteristic form may be acquired at different periods. When it exists at an early period, the dusky yellowish spot of the centre of the vesicle is absent, its place is occupied by concrete lymph, and the vesicle commonly has more central depression, and more elevation and induration of the margin.

The crust gradually changes from an amber to a yellowish brown or black; sometimes, from an admixture of blood, it is black at an early stage. It partakes of the form of the vesicle, though sometimes it is irregular. As the vesicle enlarges, the central crust in the same ratio increases in breadth and thickness, advancing towards the circumference, and resting upon the epidermis until the tenth or eleventh day, when the elevated margin beginning to decline, the central crust having become darker, thicker, and larger, in all directions, often reaches its inner circle, occasionally partially overtops it, about the thirteenth or fourteenth day. The epidermis around and beneath this crust, if punctured at any part except the immediate centre, yields nothing but blood. It often has a rumpled and pustular appearance. These vesicles, and a few others scantily supplied with lymph, never acuminate.

The areola differs in colour and extent, and is often entirely absent. In thick white skins, at its acmé, it is of a pale rose-colour, and seldom when the vesicles are distinct more than three or four lines in diameter. In dark skins it is entirely absent, except when they are very thin: in that case it will appear as a circular line of a dull vermilion, a reddish brown, a tawny or a coppery hue. When absent, the erythematous inflammation of the superficial, surrounding, and subjacent tissues, of which it is one of the signs, is still indicated by others, viz., heat, tenderness, and circumscribed induration. This induration is greater where the tissues are thick and compact, though more circumscribed and better defined. Where they are thin and lax, it is less regular and more diffuse. The former is the case on the udder, the latter on the teats.

Seat of the Vesicles.—The vesicles are found principally on the teats, but are often seen on the udder, especially on the lower and naked part. They are very frequent around the base and neck of the teat, and also on the body; now and then on the apex. The number varies considerably—occasionally one or two; not unfrequently twenty, thirty, or even sixty, dispersed about the teats and udder.

Size and form of the Vesicles.—Perfect vesicles may be seen scarcely much larger than a pin's head, and not unfrequently as large as sixpence, sometimes even larger. On the same animal they often appear as large as a vetch, a pea, a horse-bean; the latter is a common size. In general the more numerous they are, the smaller they are. The form of the vesicles is circular or oval; now and then, in some parts, somewhat irregular; almost invariably circular around the base and neck of the teats. The oval form is to be found on the udder, but principally on the body of the teats. Its axis seems to be determined, as well as its form, by a fissure or furrow in the skin. Where the skin is thin, vascular, and much furrowed and corrugated, which is often the case on the teats of red cows, the form is irregular, more especially when the vesicles are coalescent.

The colour of the Vesicles.—This varies according to the age of the vesicle, and is again modified by the colour and texture of the skin. At an early period, from the first to the third day, where the skin is thin and vascular and the colour fair, that of the vesicles varies from a florid red to a deep damask or purple. At a corresponding period, in thick skins of a light colour, that of the vesicles is less intense, but often bluish. In thin skins, very dark, a degree of redness is still visible, often a light damask or bright rose; but when the skin is thick and dark, the colour is more obscure. In general the vesicle is lighter in colour than the surrounding pigment; but in all cases there is presented a striking metallic glistening aspect. As the vesicles advance, the depth of their colour proportionately diminishes. It is, however, always darker at the base than on the surface, especially on the elevated border, where it is also more glistening. In the fairer skins, the glistening lustre resembles that of silver or pearl; and some vesicles, where the skin appears diaphanous, have a bluish white or pale slate colour, particularly towards their centre. In very dark thin skins, the colour of the vesicles is occasionally reddish at their base, and they have their surface much lighter than their ground, glistening with the lustre of mica or of lead. When fully developed on the light-coloured skins, the vesicles vary from a bright to a pale rose or flesh colour, which is deeper at the base, and blends softly with the varying tint of the areola, when present, or terminates in a narrow rose-coloured ring when that is absent. At this period, even in the dark reddish brown skins, the raised and tense margin of the vesicles have a rosy hue, which increases towards the base, where it terminates, except in very thin skins, insensibly in a deep tawny hue. The bluish, bluish white, grey or slate-coloured

tint of the depressed surfaces of some vesicles is most apparent, and the metallic lustre is most conspicuous in all. But these are not all the variations of colour met with; there are others, some of which are not unfrequent. On white skins, when very thick, and at the same time much corrugated, the vesicles have a dull white or cream colour. This will also appear when some vesicles have been injured and a portion of their contents has escaped, diminishing their tension and plumpness. A recovery of tension restores their former warmth of colour and glistening aspect. On light brown thin skins, especially when the vesicles are not deeply seated, the depressed centre is of a dirty yellowish white. These and other superficial vesicles, which resemble more the human vaccine vesicle, have a tendency to become pustular on their surface, and, at their margin, often vesiculate.

After the tenth day the vesicle loses its plumpness, its warmth of colour, its glistening aspect, its areola, and its indurated base, and in general, when undisturbed, rapidly subsides. Those which early exhibit the central crust, in a day or two after this period have their centres completely occupied with its oval, or circular, or irregular form, and scabrous substance. By the thirteenth or fourteenth day this crust is at its greatest magnitude, is of a brownish black colour, and adheres more or less tenaciously to the epidermis and skin beneath, and is bounded almost always by some traces of indurated margin, even at the twentieth or twenty-third day, when it separates and leaves a smooth cicatrix, slightly depressed, of a white colour on dark skins, but often of a pale rose on lighter coloured and thin skins. The acuminate vesicles frequently spontaneously burst, are often broken, or slowly collapse, and, with others which have little or no acumination, gradually desiccate from the centre to the circumference, changing their colour, which is dull and rather paler than that of the surrounding skin, to a yellowish, yellowish brown, and black, and forming at length a thick laminated, partly diaphanous crust, of a horny and glistening aspect, but brittle texture. The small crusts are often slightly acuminate, the larger more or less depressed in the centre, both retaining the form of the vesicle, but being, of course, less in diameter. These crusts fall about the same time as those above mentioned, leaving a similar cicatrix.

On the teats, especially about their bodies, the crusts are often large, being conjoint and often compound, two or more crusts of coalescent vesicles being directly united or intermediately connected by thin, dirty yellowish opaque, or black irregular

incrustation, left by pre-existing marginal or intervening erysipelatous vesications, which have been attended with sanguineous exudation or puriform secretion. Here the cicatrices are often deep and irregular, jagged or cruciform; but the greater part of the ulceration in general appears to have been superficial, in the central parts of which the specific and deeper erosions of the cutis are very conspicuous. In some animals, however, where the eruption has been interfluent, and much local irritation inflicted, deep and irregular seams succeed the more profound and protracted ulcerations. The appearance of the natural and casual disease, not unfrequently in different stages, at the same time in the same subject, is too obvious to be overlooked by even superficial observers. Papular or tubercular elevation—papulæ, more or less advanced to the vesicular form—vesicles, more or less dimpled or depressed—vesicles more or less acuminate, conoidal, or semi-globular—vesicles, more or less desiccated—varying in size from a mere point to eight or ten lines or more in diameter, certainly may be seen at times co-existent. Some of the causes are sufficiently obvious. No sooner is lymph produced, than by pressure in the recumbent posture, self-vaccination may occur; but a more frequent and more efficient cause are the reiterated manipulations of the milkers. These men, night and morning, in the performance of another task, unconsciously but most effectually perform on an extensive scale a very important process—a series of *re-vaccinations*, both from the infecting and infected animals. Hence many of the apparent anomalies and incongruities above alluded to. Some papulæ, appearing late, never pass into the other stages; others of earlier date, possess some of the vesicular attributes; others, still earlier, exhibit them all, and hasten on with rapid but unequal steps to the final stage of desiccation.

A due consideration of all these phenomena and their associated circumstances would make it appear, therefore, that the disease in the cow has few if any anomalies by which it may be distinguished from the disease observed in man. The phenomena in man called supernumerary vesicles, and those produced by what has been called Bryce's test, seem as strictly analogous to those appertaining to the cow as can well be desired. It is in the supernumerary vesicles alone of man, whether eruptive or not, that we are able to trace the corresponding changes from the papular to the vesicular state. The inoculated vesicle in him, of course, will not suffice for that purpose any more than the casual vesicle in the cow, palpably induced by the manual application of lymph to a visibly abraded

or fissured surface. The two kinds of vesicle in the cow, it has been seen, exhibit some striking differences from the supernumerary and inoculated vesicle in man. In the supernumerary vesicle, though the tendency suddenly to acuminate does exist, as in the cow, yet it always possesses more obvious indications of the vesicular character on its surface and at its margin than is ever seen before acumination in that animal, where an indurated and more or less elevated solid substantial margin alone appears. This remark applies also to the vesicular tumor, or the vesicle with a central crust; its margin is solid, indurated, tense, and shining, but the epidermis is not raised by distended cells giving an obvious vesicular appearance as in man. The central crust of this vesicle, of course, has its analogy in man, and in him depends on a corresponding though artificial cause. It is always progressive and more obvious in the cow. The lymph in man has not that tendency to escape, in the form of a crust, from a deep puncture or accidental fissure; the containing cells, readily distending, elevate the yielding and thinner cuticle; whereas, in the cow, the lymph is slowly and scantily secreted for a time, the cuticle is thick and resisting, and an epidermic fissure affords the readiest outlet. A near approach to this tumor-like form sometimes, it is true, is found in children in particular states of the health, or in those of phlegmatic habits, otherwise healthy, with thick skins, where the vesicle, of a rose or damask hue, rises boldly and in a solid form above the level of the skin, covered with an ash-coloured or bluish epidermis, which being punctured, like that on the cow, yields scarcely any thing but blood, even till the tenth day. In form, size, colour, &c., the analogies, exceptions, and their causes, are too obvious to need particular description. In the irregular appearance of the eruption, hitherto, I have seen nothing essentially different from what occasionally occurs or may be induced in man, as above alluded to; and as I have never yet succeeded, after numerous attempts to revaccinate the cow, subsequently to the development of the areola or its attendant phenomena, I shall look with suspicion and some distrust on vesicles apparently evolved after the twelfth day.

The cow, like children, and the young of other animals, particularly high-bred dogs, is subject to a purely vesicular eruption, consequent upon vaccine fever, which often bears a striking resemblance to vesicular varicella. This commonly occurs about the ninth or tenth day of the vaccine, in the form of erythematous-papular elevations of different sizes, solitary or in groups, evidently of sub-epidermic origin, which, within twenty-four hours, contain a pellu-

cid serous fluid, raising the epidermis. This fluid being more or less imbibed by the cuticle, gives, in the white skins, an early appearance of opacity to the vesicle; in the darker skins, a yellowish brown or dirty yellowish white colour is soon apparent. On the second day the fluid is straw-coloured, and becomes speedily turbid; the vesicles desiccate with brown and black, bid; the cuticle collapses or bursts, turns yellowish brown, and before the fifth day thin, flimsy, brittle crusts, which speedily fall. They vary in size from a mere point to that of a vetch or small pea, or are even larger, may occur on any part, but most commonly appear on parts void of hair; sometimes they arise later, and not unfrequently continue to form and desiccate for three or four weeks.

Besides this vesicular and other occasional co-existent eczematous and ecthy-matous eruptions, less likely to be mistaken, it must be borne in mind that the state of the teats and udder, during and after the specific eruption, is very favourable for the generation and reception of other contagious eruptions, which are sometimes seen to occur in the same dairy. Hence it is no uncommon thing for cows which have recently passed through the former to become the subjects of the spurious pocks. In the winter of 1838-9, I witnessed this phenomenon most satisfactorily. In a dairy farm, containing several sheds, the animals in one shed, scarcely recovered from the true disease, became affected with the white vesicle, (to be hereafter figured and described,) from the introduction of an affected cow from another shed, and several of them continued under its influence for two and three weeks longer. The character of the eruption of genuine vaccine, its seat, its cellular structure, its hard and knotty feel, its glistening aspect, its tardy and progressive change to the vesicular form, its central depression, its late acumination, afford in general broad and palpable grounds of distinction. Difficulties in the way of prompt and accurate discrimination, especially in solitary vesicles, will be better indicated and more appropriately discussed in a special account of the spurious pocks.

Recurrence of the disease.—At what period the disease may recur in a cow, and with what amount of modification, I have had no opportunity of personally observing. Here the animal is rarely kept for daily purposes after the fourth or fifth period of calving, often not so long; and as it is not very common to notice the disease in the same dairy more than once within that time, recurrent or modified cases are not likely to be met with.

ON THE TREATMENT
OF
CERTAIN INJURIES OF THE EYE,
OCCURRING IN INFANTS AND YOUNG
PERSONS.

By RICHARD MIDDLEMORE,
Surgeon to the Birmingham Eye Infirmary.

[For the Medical Gazette.]

I PURPOSE, in my present communication, to place before the readers of the MEDICAL GAZETTE the result of my experience in the treatment of cataract occurring in early life, whether congenital, the result of local injury, or taking place from any circumstance not distinctly ascertained.

If ordinary congenital cataract be allowed to continue until the subject of this defect has arrived at or towards adult age, certain important changes take place; for instance, the lens is absorbed, the anterior and posterior hemispheres of the capsule become thick and opaque, and either fall into apposition, or become united by an organized medium.

Concussion of the eye or head, wound of the lens and its capsule, and a variety of other accidents, may occasion cataract, and, if such an event take place in early life from any of these circumstances, and no attempt be made to relieve it, thick, tough, capsular cataract is likely to remain, and is especially prone to contract adhesions to the iris, and to diminish the pupillary aperture.

It will be perceived from this statement, that if, in early life, the lens and its capsule become opaque from any cause, and no prompt surgical efforts be employed to procure the disappearance of the opaque matter, a secondary, and far more troublesome, and less manageable form of disease will almost certainly occur. Hence, it may be laid down as a rule of practice, admitting of scarcely any exception,* that operative proceedings should be employed soon after the distinct establishment of the cataractous malady, *whenever it occurs in early life*. I say *in early life*, because, when the same malady occurs at an after period, the same reasons for removing it by operation do not exist. For instance—1, if, then (at a late period of life), the disease continue for very many years, it is not by any means so liable to be converted into a more unmanage-

able description of malady, so that a time of choice is, as it were, allowed us; on this account it would be manifestly improper to select, for the purpose of performing an operation, the period of inflammation, just when the eye is very unfavourably situated for such a proceeding; 2, the eye is perfectly developed, and its growth cannot, therefore, be arrested, as it may be if an operation be too long delayed, as in the case of congenital cataract; 3, the sensibility of the retina *has been* perfect, and *has been* exercised, so that atony of that important part is not likely to take place from the oftentimes temporary, and always partial, discontinuance of its natural stimulus*, as occurs in the instance of cataract (traumatic or otherwise), affecting only one eye, in elderly persons; 4, the question of personal appearance is comparatively of little importance, &c.

Cataract occurring in young persons is now generally treated by the anterior or posterior operation of solution. In performing either of these operations, we are very properly directed to destroy the anterior capsule to an extent at least equal to the size of the natural pupil; but I am convinced this important direction is by no means sufficiently attended to. In the operation of keratonyxis, owing to the difficulty of moving the needle about in a texture like that of the cornea, without causing the escape of the aqueous humour, the capsule is sometimes merely divided; a portion of the cataract escapes into the chambers of the eye, and perhaps a small quantity of the soft flocculent lens is interposed between the lips of the incision in the capsule. So, also, in the posterior operation of solution, the needle, having passed through the lens towards its margin, is, indeed, pushed through the anterior capsule, if that membrane be healthy, but, if unusually thick and tough, it may be *raised upon* and *pushed before* its point; but in depressing its point, with a view of lacerating the capsule, it will, very often I fear, pass nearly through the same aperture at which it entered, into the substance of the lens, where it may be moved about with much apparent, but little really useful, effect. Now, in

* The reader will be so good as to bear in mind that I am not professing to discuss at all in detail the propriety of operating for cataract, when existing only in one eye, in persons at an advanced period of life.

such cases, what is the result of these proceedings? The wound of the capsule heals very readily, if no portion of the lens be interposed between its edges, and there is scarcely any vestige of the puncture; but if any portion of the lens protrude through the opening, it is gradually absorbed, and there remains an opacity of the capsule of a greater or less extent. The capsule being not at all, or only very slightly, opaque, proceeds to the absorption of the lens, which it generally accomplishes; it then becomes opaque; its two layers meet, or they become united, and constitute a thick, tough, opaque texture, which is, in fact, worse than the original disease. Sometimes, when the posterior operation of solution has been performed, the injury to the capsule may have been more extensive than I have now stated, but still not sufficiently great to permit the discharge of the whole of its contents, nor to destroy its opacity until it has completely absorbed the lens, when, having become, as it oftentimes will do, inflamed, it generally secretes a lymphatic matter, by means of which the capsules, the iris, and an intervening mass of lymph, are united, and remain as a future obstacle to vision. Hence, then, arises the necessity—and the fact cannot be too frequently presented to the notice of junior practitioners—of making a free laceration, and extensive comminution of the anterior hemisphere of the capsule, at a *first operation*, namely, to prevent the occurrence of that form of disease in which the two layers of the capsule meet or become united, form adhesions to the iris, and constitute an obstacle to vision which nothing short of extraction can entirely remove. The importance of preventing the *secondary* disease, by a due attention to the treatment necessary for the perfect cure of the *primary* affection, is manifestly very great; and, on this account, I hope to be excused for referring to the subject in a manner which to some may bear the appearance of needless repetition.

If, however, the disease take place in the eye of a young person, from injury—for example, a slight wound of the cornea and capsule—what are the measures best adapted to secure to the patient the best chance of the restoration of sight?

If the injury be unattended with displacement of the lens, or any material

wound of the cornea, or any severe inflammatory symptoms, the plan of treatment I am about to propose, and which has not been previously stated by any author with whose labours I am acquainted, appears to possess many advantages. On referring to the ophthalmic articles in the *Surgical Dictionary* of Samuel Cooper,* and the *Treatise* of W. Lawrence,†—works which are characterized by fulness of detail, accuracy of statement, and extent of research—I find the treatment of such injuries is represented to consist in the employment of purgatives, the application of leeches, blisters, &c.; no mention being made of an early operation with a view of preventing the formation of tough capsular cataract. The only allusion to the subject I can find is in a communication by Mr. Barton,‡ in which, sanctioning the recommendation and practice of St. Yves,§ Warren,|| Beer,¶ and others, he advises the early extraction of the lens, in cases where it has been accidentally displaced; ** and likewise, though some-

* A Dictionary of Practical Surgery, p. 1038, London, 1838.

† A Treatise on the Diseases of the Eye, p. 143, London, 1833.

‡ LONDON MEDICAL GAZETTE, vol. v., p. 784.

§ A Treatise on the Diseases of the Eyes, translated from the French, by J. Stockton, M.D. London, 1744.

|| New England Journal.

¶ Lehre von den Augenkrankheiten, b. 2, Wein, 1813—1817.

** The following quotation, from the ingenious *Treatise* of St. Yves, may not be uninteresting:—"When the eye receives a violent stroke, the crystalline is loosed immediately, and, in two or three days, it becomes opaque, so that the patients can only perceive the light" (p. 228). After having stated that the lens, when so displaced, may have two situations, which he describes, he proceeds as follows:—"The *third* place is when the cataract passes altogether into the anterior chamber, and is placed between the *cornea transparens* and the iris; from whence it must be taken out in the manner that shall be described in the sequel of this *Treatise*" (p. 229). The "manner" consists in making a section of the cornea, introducing a scoop, and *canting* the lens through the opening. The author's words are: "When you design to perform this operation, to draw out the crystalline which has passed in the foregoing manner (that is, into the anterior chamber), the patient must be seated in a chair, with his eye fronting the light; open both his eye-lids with your thumb and fore-finger, then, with a sharp-edged lancet, divide the *cornea transparens* a little below the middle of the pupil. You must continue your incision transversely, from one side of the cornea to the other, in such a manner that you do not leave unsevered, on each side, above half a line's breadth of the *cornea transparens*. Then introduce a fine small scoop through the orifice, convey it behind the crystalline, and, with it, draw out that humour, through the incision made in the cornea." (P. 262.) I shall still further extend this foot note, for the purpose of introducing the following curious quotations:—"Three sorts of cataracts pass through the hole of the pupil. In

what vaguely, recommends the extraction of the lens when rendered opaque by accidental violence, without being displaced. But I do not know that this advice is intended to apply to young children, as the only examples brought forward, in proof of the utility of the practice suggested, are, the cases of "a country gentleman" and "a mechanic." I apprehend, however, it is *not* intended to apply to very young children, inasmuch as the only operation proposed is that of extraction, an operation, which, although I will not go so far as to assert it is not possible to perform on a child two or three years old, yet I may safely affirm it is so difficult of performance, (the iris being convex, the lens soft, the eye, as it will be under the circumstances in question, inflamed, the patient very young, &c.) in a manner which may justify the expectation of a successful result—successful as regards the appearance of the eye, and the restoration of

the first, the consistence of the crystalline is soft; in the second, it is hard and concrete, like a stone; in the third, it is partly soft and partly petrified. When it is soft, the aqueous humour which lies behind this body thrusts it forwards and fixes it *in the pupil*; but, when this body is hard, it passes at once through the hole of the pupil, upon the least effort made in bending the head." (p. 262) "Whatever passes during the operation (of couching), through the hole of the pupil, if it be of sufficient solidity, the point of the needle must be pushed through the hole of the pupil, without touching the iris; then pierce the body of the cataract with the point of your needle, and place it where it is usually placed (that is, in the vitreous humour), p. 271." The reader of these extracts will not fail to remark that St. Yves understood the nature of dislocation of the lens into the anterior chamber; was aware of the inconvenience its presence occasioned; and practised and advised its extraction, with a view of relieving them. He was also aware that, when the lens was somewhat soft, it would occasionally press against the iris, (he calls this passing *into*—and who can say this is incorrect—not *through* the pupil) and that the extraction of this soft lens was necessary not only to restore vision but also to relieve pain and inflammation. Mr. Gibson of Manchester, has received much credit for suggesting the removal of soft cataract, by making a small incision of the cornea; and the justly celebrated Dupuytren has been infinitely lauded for recommending the introduction of a needle through the sclerótica into the anterior chamber, with a view of depressing the crystalline when dislocated into the anterior chamber; but I much question if any impartial reader can give either of them much credit for *pure* originality, as far as these questions are concerned, after having perused the work of St. Yves. The subject of dislocation of the lens is somewhat fully discussed by Dr. Warren, of Boston, and its treatment illustrated by the recital of cases; and I am rather astonished his remarks have been so little referred to. [They were re-published in the Medical and Physical Journal, vol. xxvi. p. 386.] He advises the early extraction of the lens when displaced, even although it may not have passed into the anterior chamber, but makes no reference to the disease when occurring in infants and children.

vision—as to be *almost* impossible. Perhaps, however, the question is set at rest by Mr. Hunt, who, in the course of an interesting communication, "On extraction of the lens, in some injuries of the eye," (which appears to be a further development of the views of his able and experienced colleague, Mr. Barton,) makes the following statement: "Before concluding, it may, perhaps, be advisable to mention some restrictions which may be necessary in the employment of the proposed method: as circumstances may occasionally occur which would render the operation inapplicable, attention must be given to the age of the individual; for if the patient be so young as to render the fixing of the eye, without the aid of a speculum, impossible, or of such an advanced age as would contra-indicate the performance of any operation, extraction of the lens would, in both instances, be improper. And as a farther objection to the operation at an early age, it must be considered that absorption of an injured lens, like most other reparative processes, proceeds more rapidly, and with much greater certainty, in children than in adults." (*North of England Medical and Surgical Journal*, p. 495. London, 1831.) The latter part of this statement is perfectly true, but the question is, can we, by omitting an operation, *certainly prevent* the formation of the capsular disease, which is admitted, on all hands, to be so difficult of management? If this cannot be done, then, I apprehend, an operation is far more needful in early life than at any other period of existence: and that a suitable and efficient operation can be performed, and ought to be performed with but little delay, it is the object of my present communication to prove.

I now proceed to explain the operative proceedings it is the main object of this communication to recommend; and it will be understood they are adapted to those cases of traumatic, or other forms of cataract, occurring in infants or young persons. For, if traumatic cataract, not attended with displacement of the lens, occur after the latter age, the necessity for an operation is much less than at an earlier period, chiefly because the lens is less prone to become absorbed, and the capsule to undergo those changes which so generally occur in younger subjects. And here I beg to state that, on one or two important

points, I entirely differ from preceding writers. First, in pointing out that, when the lens is rendered opaque in infants and very young persons by the application of accidental violence, it is *absolutely necessary* to cause its removal by a surgical operation, unless, indeed, it be at the same time displaced, or associated with other injury necessarily destructive to vision; and secondly, in stating that when this accident occurs in early life its cure should be attempted, not by the operation of extraction, which, for ought I know to the contrary, some persons may be injudicious enough to perform, but by that of solution.

Operation.—If a child have sustained an injury of this description—the cornea not being much injured; the inflammation produced by the accident not being severe; the lens opaque, but not displaced;—I prepare the eye for operation, by applying belladonna to the eyelids, and bind up the healthy organ. Having steadied the eye by means of the fingers of an assistant, (I scarcely ever use a speculum) if operating upon the left eye, and by the agency of my own if operating upon the right eye, I introduce the needle through the sclerotica, as for the posterior operation of solution,* and, by continued and varying movements, lacerate the capsule as freely as possible, to an extent equal, at least, to the size of the pupil in its ordinary state of dilatation. Having done this, bearing in mind that the needle is slightly curved, I very gently withdraw it, keep the patient in a darkened apartment, and employ any antiphlogistic or other measures the after course of the case may render necessary. The daily application of belladonna is requisite, with a view of facilitating and rendering more perfect the solution and absorption of the comminuted lens and its capsule.

Let it be remembered that, as the

* I do not advise the performance of keratonyxis, because the cornea has, in many of these cases, already sustained injury; the eye is irritable from the existence of a slight degree of inflammation; and, on these accounts, the necessary manipulations through the cornea would be more than commonly difficult. The needle employed is small and round, being slightly curved at its point. It is introduced with its point downwards (towards the lower part of the cornea), so that neither its concave nor its convex surface is opposed to the iris. As soon as the needle is perceived within the pupil, its point is directed, by a slight rotation of the handle, towards the

object of this operation is to prevent the establishment of a secondary form of disease (tough capsular cataract), which usually occupies in its development several months, it is not imperative to perform it so soon as the opacity of the lens appears; neither is it advisable to do so until all acute inflammation has been subdued; in this respect differing from some cases of dislocation of the lens, which may demand the prompt performance of a surgical operation.

Sometimes it is necessary to perform a second operation, but this seldom happens if the first operation is practised with the necessary care, except in those cases where the lens has become opaque independently of any local injury, which has caused the laceration of the capsule. So that a first and single operation for congenital cataract affecting the whole lenticular substance would not be so likely to be perfectly effective as would the same operation performed upon the eye of an infant suffering from traumatic cataract. In fact, in the case of congenital cataract, a single operation will not, by any means always, effect the entire removal of the disease, however carefully and perfectly performed.

I shall conclude with the following condensed summary of the more material statements contained in the preceding remarks:—

1. *Proposed operation.*—Posterior operation of solution, with very free laceration of the capsule.

2. *State of disease or injury to which the proposed operation is adapted.*—Any injury of the eye, occurring in infants or persons not more than thirty years old, and producing opacity of the lens *in situ*, but not occasioning any extensive wound or injury of the cornea, or other part of the globe, necessarily destructive to vision. Should the soft lens, uncovered by its capsule, (which has been extensively torn by the accident,) be thrown from its natural situation, either into the pupil or the anterior chamber, the operation is not required; first, because the supposed free laceration of the capsule protects the patient from the occurrence of capsular cataract; and, secondly, because the youthfulness of the patient, and the softness of the lens, render almost certain the disappearance of the cataract without the performance of a surgical operation.

3. *Time at which an operation should be performed.*—As soon as acute inflam-

mation has subsided, and any inflammation the globe, or any injury the cornea has sustained, has been either much moderated or altogether subdued. Just as, in other instances, when about to perform a surgical operation, we get the parts, upon which we propose to operate, in as quiet and tranquil a condition as possible beforehand, so here we act on the same principle, and, by freeing the eye from inflammation, place it in the most favourable state we can to sustain the irritation occasioned by the operation we propose to perform. The operation is not suggested with a view of relieving pain or inflammation, or with the intention of preserving the vision of the opposite eye; for it is presumed that a somewhat slight wound of the cornea, and opacity, without displacement of the lens, will neither produce serious inflammation or severe pain of the affected eye, nor endanger the vision of its fellow. It is performed with a view of restoring the sight of the injured eye, and of preventing the establishment of that form of capsular cataract which, as I have previously explained, is always difficult of management*.

I could readily append to this communication a number—a very large number—of cases which have occurred in my own practice, and which forcibly illustrate the advantages of the plan of treatment now suggested, but am unwilling to lengthen this communication, and apprehend the explanations I have given, which embrace principles rather than details, render this measure in some sort unnecessary.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abrégé.”—D'ALEMBERT.

An Essay on the Treatment and Cure of Pulmonary Consumption, &c. By GEO. BODINGTON, Surgeon. London, 1840.

MR. BODINGTON believes phthisis to be a nervous rather than an inflammatory disease; and accordingly treats it with a tonic diet, fresh air, and sedative medicines. He protests against beef-steaks

and porter, on account of their grossness and unfitness for a consumptive patient; but he gives “a glass of good Sherry or Madeira in the forenoon, with an egg, another glass of wine after dinner, fresh meat for dinner, some nourishing food for supper, such as sago, boiled milk, according to the taste and digestive powers of the patient.” (p. 14.)

He narrates six cases treated in this manner, five of which, he says, were cured, and the remaining one, though ultimately fatal, was arrested in its progress. Mr. Bodington allows that local bleeding may be necessary to relieve congestion of the vessels in phthisis, though the disease is cured by restoring the nervous energy. In support of this distinction he cites Magendie's experiment, where the division of the orbital branch of the fifth pair of nerves within the cranium caused intense inflammation of the eye. “It is plain that the whole course of antiphlogistic treatment, carried to its full extent, would fail in such a case to cure the eye; but a restoration of the nervous power, by reunion of the divided branch, if that could have been effected, would have cured it; the antiphlogistic means would have assisted, by unloading the distended vessels, and facilitating their restoration to their natural calibre.” (p. 51-2.)

If Mr. Bodington republishes his essay, we think that he ought previously to read more of what has been already written on the disease, particularly the admirable work of Dr. Thomas Young.

A Manual on the Bowels, and the Treatment of their principal Disorders, from Infancy to Old Age. By JAMES BLACK, M.D. of the Royal College of Physicians, London, &c. &c. London, 1840.

This work is intended partly for young practitioners, and partly for the general reader, and may furnish both with some useful hints. Yet we think it would have been better had the author divided his book into two separate treatises, the one addressed to the profession, and the other to the laity; for he might thus have entered more into details, without danger of being misunderstood, or of the valetudinarian attempting to put into practice the precepts addressed to the physician.

* I may as well remark that it was for the removal of this capsular disease that I invented the needle-forceps described in the number of this journal for April 7, 1838.

A Treatise on the Physiological and Moral Management of Infancy. By ANDREW COMBE, M.D., Fellow of the Royal College of Physicians of Edinburgh, &c. Edinburgh and London. 1840.

THIS book is by the author of 'The Principles of Physiology applied to the Preservation of Health,' &c., and is characterised by the quiet good sense which pervaded that useful publication.

Dr. Combe has divided his work into fifteen chapters. The first contains an introductory explanation, and the others are on the extent of mortality in infancy; the sources of disease in infancy; delicacy of constitution in infancy; conditions in the mother affecting the health of the child; the constitution of the infant at birth; the nursery, and conditions required in it; the management of the infant immediately after birth; food of the infant at birth; the choice, properties, and regimen of a nurse; artificial nursing and weaning; cleanliness, exercise, and sleep in early infancy; management of the infant during teething; management from the time of weaning to the end of the second year; and, lastly, on the moral management of infancy.

At p. 103 he supposes that the change of temperature from 98° to 60° , or 65° , is the chief agent in exciting respiration in the new-born infant. But does not the child breathe equally well in those climates where it is born into an atmosphere at 90° or 95° ?

Dr. Combe's work does him great credit, and will not only be an excellent manual for private families, but afford many useful hints to practitioners.

The Transactions of the Provincial Medical and Surgical Association. Instituted, 1832. Vol. xiii. London: Churchill, 1840.

THIS volume, independently of being a record of the proceedings of the Association, contains several articles on medical topics of interest. One of these is the report of the section appointed to inquire into the present state of vaccination; a report which has already been the subject of much discussion in this journal. We also have a general retrospective address, by Dr. Symonds, of the Bristol Hospital; and one on surgery, by Mr. James, of Exeter: these are interesting, and highly creditable to their respective authors. But the chief

interest of the volume depends upon the observations on the variolæ vaccinae, by Mr. Ceely, of the Buckinghamshire Infirmary. We regard this as a very valuable addition to the pathology of the disease, and we have taken the liberty of extracting a considerable portion of it in another department of our journal. In the original, it is accompanied by above 30 coloured engravings.

MEDICAL GAZETTE.

Friday, July 31, 1840.

"Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

MEDICAL REFORM IN FRANCE.

WE should apologize to our readers for directing their attention a second time to the question of medical reform in a foreign country, did we deem the topic itself a purely foreign one. But the truth is, that the grand spring of the question is the same in France as in England. The natural discontent of the profession with its social position is as strong in Brittany as in Britain; and on both sides of the water the hope is loudly expressed that every difficulty may be got over by improvements touching diplomas and examinations.

The correspondent of the *Gazette Médicale*, on whose communications we commented a short time since*, endeavoured to show that the Medical Faculty proposed to be erected at Rennes was wholly superfluous, the three already existing in France being amply sufficient. He observed, that even the Parisian Faculty was far from overworked by its labours in examining candidates for the doctor's degree, and that the Faculties of Montpellier and Strasburgh had but little to do. Moreover, if this easy work of one, and comparative idleness of two, existed under the old system, when the number of

* MED. GAZETTE, July 10, 1840.

medical students was constantly on the increase, what will they be under the new regulations? For, besides the degree of bachelor of letters, the University of France now requires the degree of bachelor of sciences from the candidates for the doctorship. Hence the young men who aspire to this honour in future, must not only have gone through their *humanités*, *i. e.* belles-lettres and rhetoric, and have a knowledge of the ancient languages, but they must have studied the different sciences with which medicine comes in contact. These regulations have produced the effect which the University intended. It appears, from a report of M. Orfila, that in 1835 there were 1522 new pupils in the three Faculties of Medicine, and the eighteen secondary schools; but in 1837, when the bachelorship of science was required, the number was only 744; in November, 1839, it was only 596; being a diminution of nearly two-thirds.

Two possibilities, however, have been mentioned, says A.M.P., as likely to augment the labour of the Faculties in the examination of doctors. The first is the abolition of the *officiers de santé*, when it is supposed that those who now are contented with this grade will aspire to the dignity of M.D.; and the second is an increase in the number of examinations for the doctor's degree.

The Parisian critic is of opinion, in the first place, that the abolition of the *officiers de santé* would be extremely unadvisable, and we perfectly agree with him. An entire suppression of this inferior grade, combined with so sudden an increase of rigour in bestowing the degree of M. D., would be a bounty on quackery, if ever bounty there was. It does not appear that there is a general overflow of practitioners throughout France, whatever there may be in great towns; and if the *officiers de santé* are taken away from those who cannot

afford to pay for scientific doctors, lay medicine in all its queer varieties must rule the roast in village and hamlet. It is difficult to criticize foreign arrangements with accuracy, yet it seems to us that the University has rather overshot the mark by driving away two-thirds of its medical students; especially when we know that if M. D.'s grow too scarce in France, *officiers de santé* are the only alternative—a genus of practitioner, who are not held in high esteem, though, of course, infinitely superior to unlicensed and amateur practitioners of every denomination.

But even if the grade of *officiers de santé* was blotted out, it is argued by A. M. P., and very reasonably, few would be added to the doctoral ranks, as the *officiers* are mostly unlettered men. The labours, therefore, of the Faculties are not likely to be much augmented from this quarter.

But, it is said, the examinations passed by the candidates ought to be more numerous, which would give the Faculties more to do. True, says the correspondent, they ought to be more numerous; but, then, the years spent in medical education ought to be more numerous also; and, therefore, argues A. M. P., being here glaringly deserted by his organ of arithmetic, a greater number of examinations being spread over a greater number of years, the trouble of the Faculties in each year would not be increased.

The answer to this arithmetical fallacy is, that if the years of education are increased from four to five, or six, the Faculty will annually examine a longer series of pupils than at present, though the number of examinations which a pupil passes in a single year may remain the same.

In spite of this oversight, however, it is quite clear that A. M. P. is right in alleging that there is no want of fresh Faculties for the purpose of creating doc-

tors, as far as the quantum of work is concerned, which the members of those Faculties have to go through. There is another, however, which he touches on very lightly, but which may have had great influence with M. Cousin, when he proposed the establishment of a new Faculty at Rennes. The inhabitants of a great part of Brittany are more than a hundred leagues from Paris, the nearest Faculty; and if he was aware how the number of medical students has fallen off in late years, he might be willing to make up in some degree for the increased severity of the regulations by the convenience of a Faculty within the province.

It is to be observed that the state in France contributes part of the expense of medical education; for each pupil pays only 1000 francs (£40) for his education and his diploma (*droits d'inscription et de réception*); and as this is insufficient to keep up three Faculties and eighteen secondary schools, the former are assisted from the funds of the University of France, and the latter by the towns and departments in which they are situated. Considering the difference in the scale of prices and expenses between France and England, it might seem, at first, as if a thousand francs were a tolerably large sum, and required no further addition from the state. But we suppose that in France it is thought that if a man is of sufficient note to be allowed to lecture on any branch of medicine, he ought to derive an income for his exertions; while, in England, where the matter finds its own level, as we say, by private competition, the lecturer is often too happy if the fees enable him to pay the rent of his room, which is the arena of his glory! Even in France, the professors at some of the secondary schools must be badly off, unless the department contributes handsomely; for, according to A. M. P., this year there were only thirteen new

pupils at the secondary school at Nantes, seven at Rennes, and six at Angers.

The great problem which lies at the bottom of all these details, is, how can medical advice, of the best possible quality, be provided gratis for the poor, and at a very low price for those who are just above the poor? If the state is anxious only concerning the quality of the advice, and suddenly demands a great increase of knowledge from medical candidates, the candidates become few, as we have just seen in France, and interlopers will become many. If cheapness alone is desired, while literature and science are wholly neglected, the practitioner loses his position in society, and with it his moral influence, which is quite as bad for his patient as himself. How are we to steer clear of this Scylla on one side, and that Charybdis on the other? We attempt to do so in England by gradually raising the standard of medical qualifications, and by paying those practitioners who attend the poor. Something more remains to be done. In the place, medicine must be taught more as a practical art, and examinations, instead of consisting only of words, must be enlivened by a tangible reference to things.

Secondly, our surgeons must be encouraged to attend on the poor by real salaries instead of nominal ones; and it should be publicly acknowledged by the legislature, as well as the philanthropist, that medical, like clerical, succour must be provided for the indigent at the expense of the state; and that the live-long labour of the cottager is not over-rewarded by these additions to his nine shillings a week.

Thirdly, those classes who, though above the necessity of accepting gratuitous medical aid, are yet unable to give a doctor's fee, or face an apothecary's bill, should be taught how a burden may be borne in common by each member of a small community, and

should secure themselves against loss by disease, as they do against loss by fire.

PUBLIC HYGIENE.

It has ever been a subject of regret to the enlightened philanthropist, that the duties on French wines are so high, as to reduce their consumption in England to a very trifling quantity.

The unfortunate predilection for acrid and intoxicating wines, which is the characteristic of this country, was fostered by the Methuen* treaty, concluded in 1703, by which we bound ourselves to impose 50 per cent. higher duties on French than on Portuguese wines. It is true, that even previously to this agreement, the consumption of Portuguese and Spanish wines was far greater than that of French; but the Methuen treaty naturally added to the growing love of alcohol; so that in 1830, while the consumption of Portuguese and Spanish wines was nearly double that of 1702, the consumption of French wines had actually diminished, in spite of the immense increase of population.

But, on taking the increase of population into account, we find that the consumption of all wines per head has materially diminished; so that while the nation has been growing in wealth with a rapidity beyond all precedent, the consumption of wines, especially of the most wholesome ones, has fallen off. Hence it appears with the clearness of a mathematical result—

1. That the duties on wines generally were too high.

2. That the duties on French wines, specially, were far too high.

In 1831 the Methuen treaty was hap-

pily annulled, and all foreign wines were admitted at a duty of 5s. 6d. per imperial gallon; and this remains the tax, excepting, indeed, that a small addition has been made this session to this, as to other duties. That this duty is much too high is obvious to any one who consults the records of the Custom House, or better still, who is acquainted with the habits of the middle classes. According to a sensible essay, published four years ago*, the French make nearly a thousand millions of imperial gallons of wine annually; and “we purchase from France not more than one part in 2,500 of the wine made in that country, not taking into account that part which is converted into brandy.”

As an excuse for discouraging French wines, it is sometimes alleged that the French will not buy our cottons; but surely this is a second edition of Dr. Johnson's story of the idiot, who, when his friends affronted him, used to lie all night upon the bridge! If the French like to dress shabbily, must we, in revenge, drink unpleasantly?

It is often urged, in addition, that claret is too cold for our stomachs. Pshaw! Just read the following figures; they are taken from the book above quoted, and represent the gallons of wine exported from France to different countries in 1832:—

The Hanse Towns (chiefly for the supply of the interior of Germany).....	4,666,676
Holland	2,162,769
Prussia	2,110,026
Belgium	1,899,157
Russia	1,127,448
England	530,164

Is the climate of Holland so broiling, and are Dutch stomachs so hot, that four times the quantity of French wine is

* It is a curious coincidence that the word Methuen in Greek (*μεθυεν*) signifies “the drunken thing;” will not some explainer in a future age say that the whole is an allegory, and that the treaty was merely prompted by the love of strong drink?

* Commercial History of Wine, in the Household Year-book for 1836.

required for a population so much smaller than ours?

It is worthy of remark, that long after the Methuen treaty, Scotland and Ireland, under the genial influence of low duties, were still famous for claret: so erroneous is the vulgar opinion that it is a wine only suited for hot weather! But custom-house officers, so potent is their spell, might banish claret from Bourdeaux! There is a humorous epigram by Home, the author of Douglas, in which he attributes the fiscal regulations which introduced the heavier wine of Portugal into Scotland, to a settled design to break down the spirit of the people.

Firm and erect the Caledonian stood,
Old was his mutton, and his claret good;
"Let him drink port," an English statesman
cried;
He drank the poison, and his spirit died!

It is a great mistake in public hygiene to consider wine as a luxury for a few only, and to drive the middle classes to spirits by prohibitory duties. The late Mr. Jefferson, President of the United States, expresses his gratification, in his Memoirs, at the introduction of a very cheap wine (St. George) into his neighbourhood, which had already quadrupled the number of those who kept wine. In the same work he says, "I rejoice, as a moralist, at the prospect of a reduction of the duties on wine by our national legislature. It is an error to view a tax on that liquor as merely a tax on the rich. It is a prohibition of its use to the middling class of our citizens, and a condemnation of them to the poison of whiskey, which is desolating their houses. No nation is drunken where wine is cheap; and none sober where the dearness of wine substitutes ardent spirits as the common beverage."

We, too, have a better prospect before us. A commercial treaty is all but concluded with France, and we may

hope, in a few months, to have the best and wholesomest wine in the world at a very reduced price*.

UNIVERSITY OF LONDON.

List of Candidates who obtained Honours at the First Examination for the Degree of Bachelor of Medicine,—July, 1840.

ANATOMY AND PHYSIOLOGY.

Parkes, Edmund, University College, exhibition of £30 a-year for two years, and gold medal.

Humphry, George Murray, St. Bartholomew's Hospital, gold medal.

CHEMISTRY.

Parkes, Edmund, University College, exhibition of £30 a-year for two years, and gold medal.

MATERIA MEDICA AND PHARMACEUTICAL CHEMISTRY.

Parkes, Edmund, University College, gold medal.

First Division:

Barnes, Robert, Medical School, adjoining St. George's Hospital.

Bartley, Robert Trout Hawley, Bristol Medical School.

Brush, John Ramsay, St. Bartholomew's Hospital.

Bucknill, John Charles, University College.

Carey, John, Talbot Dispensary, Dublin.

Carlill, John Burford, University College.

Cooper, Henry, University College, and Middlesex Hospital.

Goodeve, Edward, Bristol Medical School.

Heaton, John Deakin, University College, and Leeds.

Humphry, George Murray, St. Bartholomew's Hospital.

Miller, William Allen, King's College.

Nevens, John Birkbeck, Leeds.

O'Meara, Thomas, Mercers' Hospital and Peter-street, Dublin.

Parkes, Edmund, University College.

Potter, John, University College.

Powell, Robert H., Digges-street, Dublin.

Sewell, Charles Brodie, University College.

Strang, John Douglas, University College.

Unwin, David, University College.

Waddy, Jonathan Mason, St. Thomas's Hospital and Webb-street.

Way, William, University College.

Wing, Edwin, School of Physic in Ireland.

* While writing this article, we see it stated that, by a treaty just concluded, French wines are to be admitted into Holland duty-free. No fear of the "coldness" of claret there at any rate.

Second Division.

Barnett, Adolphus, London Hospital.
 Bateson, Henry, Guy's Hospital.
 Carpenter, Anthony French, School of
 Physic in Ireland.
 Dodd, Robert Phipps, King's College.
 Dunn, John Travis, Leeds and Dublin.
 Fulford, Charles, Royal School of Medicine,
 Birmingham.
 Goodfellow, Stephen Jennings, St. Bartho-
 lomew's Hospital.
 Hamilton, Edward, University College.
 Paddon, John, University College.
 Powell, James, University College.
 Rayner, William, University College.
 Ridgway, Archibald R., London Hospital.
 Sewell, Robert Russell, University College.
 Smith, William Tyler, Bristol Medical
 School.
 Spackman, Frederick Robert, Sydenham
 College and Middlesex Hospital,
 Williams, Thomas, Guy's Hospital.

CLINICAL LECTURE

ON

POLYPUS OF THE NOSE,

Delivered at St. George's Hospital,

By CÆSAR HAWKINS, ESQ.

[Concluded from p. 702.]

Treatment.—You could not expect that so solid a body as a fibrous polypus would be much under the influence of external applications, and therefore the cure is simply removal of the tumor by some means or other; and because not malignant a cure may always be anticipated, when the whole disease can be eradicated. The astringents before spoken of may, however, be here also used after the operation, to lessen the chance of the return of the polypus. The means of removal of a fibrous polypus are either extraction by the forceps, or its excision by knife or scissors, or its destruction by ligature; and the one you select must depend on the size and consistence and situation of the tumor. There is one precaution, however, which you should adopt, when you are going to operate on a fibrous polypus, which is unnecessary with the gelatinous kind; it is, always to have ligatures and lint, and a bougie, or other apparatus ready, that you may immediately resort to plugging of the nostril, if you find that there is any alarming hæmorrhage. Usually, indeed, the bleeding readily ceases by the use of a little cold water, or pressure by the finger or the forceps, for a short time, with a little plain lint, or lint dipped in solution of sulphate of copper; and it is said by Mr. Pott that he never knew any bleeding

where the polypus was at all fit for removal; nevertheless, as there are several cases on record, where the polypus was evidently only fibrous, and yet the bleeding is described as having been alarming or frightful, it is prudent to be prepared for it beforehand, though it is not necessary (as some have recommended) to pass a ligature for this purpose through the nose in all cases before proceeding to extraction or division of the tumor.

1. *Extraction by Forceps.*—In the greater number of fibrous polypi, that is to say in those of moderate size, and of not very firm consistence, and without any broad attachments, the forceps will be the best means of removing the tumor, which may be reached in various ways, according as the root is accessible, and the tumor easily moveable or otherwise. Sometimes it may be torn away in the usual manner from the front; sometimes, although separated by the forceps introduced from the nostril, it is more easily pushed back, and then seized by the fingers or forceps from the fauces: if, for instance, the body of the polypus is rather large, and expands backwards, this is the best way. Sometimes, when wedged in the nostril, the finger passed behind the palate has been found to assist the forceps introduced from the front; sometimes the polypus can be more easily laid hold of by a pair of very much curved forceps, passed from the mouth behind the palate. In some cases two pair of forceps have been found useful, by which means the tumor, drawn forwards to a certain extent by one pair, has been more advantageously seized higher up by the second pair. When very large, Richter has recommended a divided pair of forceps, the blades of which may be passed separately on opposite sides of the tumor, and afterwards joined together. When the polypus has been of very large size, and the nostril has yielded with difficulty, Dupuytren and other surgeons have divided the ala nasi with a bistoury, to prevent its laceration, and to facilitate the passage of the polypus—a proceeding, however, which can certainly be very seldom necessary.

2. *Excision.*—The fibrous polypus has frequently been found to be too firm to yield to the forceps, or its attachment too broad, or the polypus too large, to be embraced by the forceps; and, in such cases, it has often been cut off by scissors, or a knife. Here are some complicated instruments of Whateley's, to convey a ligature round the tumor previous to its division, which must (if possible,) be quite unnecessary; and a common probe pointed scissors, curved or straight, will do just as well, or a probe-pointed bistoury, part of which is covered with lint, or made like a hernia knife, in some measure, so as to cut only towards the end. The scissors can,

of course, only be used towards either end of the nostrils, as they cannot be opened in the higher part of a narrow cavity; the knife can be employed for the higher parts; in either case, the polypus, after division, as near to the root as possible, is to be drawn forwards with forceps, or pushed back into the fauces, according to its situation and figure. When thus divided, the root has been described as being as hard as cartilage, so as to require much force to cut through it; and, in one of the cases for which Wheateley had this sheathed knife constructed, he found the root two inches wide where he cut it off. Where a polypus has been situated far back, an operator has divided the palate longitudinally, in order to extract it, which must be looked upon as quite unjustifiable, since the division of the tumor in more than one piece, which has also been done, would be a preferable plan. Sometimes the hæmorrhage has been found free from danger in cases of excision, but has been alarming in other cases; and in all operations by this plan on large fibrous polypi, it would probably be right to pass a silk previously, in order to plug the nose directly if the bleeding appears dangerous.

The knife or scissors have been employed in several cases after the forceps and ligatures have been tried in vain; but I have never done it myself; and I think the plan is inferior to the others, and is only to be tried when other means have failed, as it is probably open to the objection given by Sir Astley Cooper, of a return being more likely when the tumor is simply cut off than when torn or tied, besides the greater risk of bleeding.

3. *Ligature*.—The third plan, which is applicable to fibrous polypi, is the strangulation of its root by ligature; but you may readily imagine that this is by no means an easy operation in a deep and narrow cavity with unyielding parietes: it is, therefore, most easily done when the polypus is far back in the fauces, or near the anterior opening. Here is a polypus, which was tied by the simplest means, namely, the passage of a bougie into the mouth from the front, by means of which the silk was passed round the root: the polypus itself was the size of a walnut before its removal. When passed round the root the wire or silk may be tightened by means of these common tubes, till it is separated, and if large, much pain and fœtor are occasioned, requiring the use of opium, and of chlorine or other lotions. It is, however, the passage of the ligature round the tumor which is the difficult part of the operation, and it would take me too long to explain the numerous plans which have been proposed for this purpose; for a description of which I will refer you to Boyer's works, and Malgaigne's Operative Surgery. You can

examine after lecture the latest invention for this purpose, a somewhat complicated instrument, by Mr. Beaumont, which I fear, although easily used near the opening of the nostril, must be scarcely applicable to large tumors situated far up in so narrow a cavity; in which cases only is there difficulty in the operation.

It appears to me on the whole, that of these methods the extraction by the forceps is the best and easiest; but if the tumor does not yield, then that it may be tied, if far up, as the next best means, or cut off by scissors, if easily accessible, so as to ensure the root not being removed, or destroyed by caustic afterwards; and that if the ligature cannot be applied in some way or other, that the tumor may then be cut off by the knife, though the most dangerous and uncertain plan.

Malignant polypi.—Under the term malignant polypus, as you find cases described in a variety of works, there appear to be included two different forms of disease.

4. *Cancer of the mucous membrane*.—The first is comparatively a rare disease, being a growth of a number of red vascular projections from the mucous membrane, not in the form of a polypus, but of an extensive growth from the surface, something like warts, though soft and spongy; it is analogous to cancer of the skin, in which the warty form is more distinct than in mucous membranes. It is a disease of old persons, and may affect any part of the nose or its cells, and may go on for several years without occasioning extensive destruction or contamination of the glands. In this preparation it affected the membrane of the antrum, and yet after five years spent in much suffering, with some swelling of the cheek, the cavity was scarcely filled by the tumor, and the bone scarcely at all affected. If the red projecting substance in the nostril is considerable, it nearly blocks up the cavity, by meeting from the opposite sides; and I have known the septum destroyed with cancerous ulceration, which spread up to the upper portions of the æthmoid and sphenoid bones, and occasioned a fatal influence on the brain. In the same manner, in the antrum, ulceration may spread into the nose or through the cheek, with the usual course of cancerous disease, but without much growth of fungous substance.

Palliatives are all the means that you can employ for a disease the eradication of which is in this situation scarcely a possible proceeding, after its nature has been discovered. If extracted on the supposition of its being polypus there is some hæmorrhage, and the new growth only proceeds the more rapidly from abortive attempts to effect a cure, and even caustics aggravate the pain and suffering of the patient,

without being able to reach every part which is affected.

5. *Medullary or fungous disease.*—A much more common form of malignant disease of the nose is the fungous or medullary kind of tumor, which is not confined to any age; you have lately, for instance, seen one at the age of four years, and another in a woman of forty; it is, however, more common in young persons than in those advanced in life. Its progress, to a certain extent, was seen in the woman I have just alluded to, a patient of Mr. Keate's, in whom the disease appeared first, about a year ago, like a polypus in the nostril, and was extracted two or three times with some hæmorrhage, and it used to bleed of itself when it first came. This ceased after a time, and lately the growth of the disease has been in other directions. You see it at the present time forming a tumor on the left side of the nose, just below the inside of the orbit, the inner canthus being not an unfrequent situation for its growth; it reaches a little way across the lower part of the orbit, being firm and hard, except in the centre, where some whiter substance has formed like cheesy matter, while the rest is of a dark red colour; it has pushed the eye-ball outwards and deranged the sight, though it is not yet entirely lost. It is not clear whether the tumor has yet filled the antrum, as the cheek has not yet bulged outwards, as it will do, perhaps, by and by, in the same manner as the upper part of the bone is already affected; but the bony palate is beginning to be pushed downwards by the tumor, and is a little altered in appearance. The other surgeons were asked to see her, and we decided that the disease had made too much progress to justify an operation, which could scarcely by possibility remove the whole, and would, therefore, increase the rapidity of its growth. The future progress of the case will probably be, that it will increase in various directions in the face and mouth, then it will soften and ulcerate, and bleeding will take place with unhealthy fungus, where the skin gives way: the patient's health is not yet much affected, but she will, probably, soon become thinner, and will lose her appetite and sleep; she will have rigors, or perspirations, and die exhausted by irritation, or will have some affection of the sensorium by the disease spreading inwards, and occasioning convulsions and coma, as in our former patient with the fibrous polypus; in short, it will run the course of fungous disease in any part of the body, changing the surrounding textures, and, probably, occasioning a similar disease in other parts of the body.

In most cases of malignant disease of this character in the nose, the disease is not properly a growth of the mucous membrane, like a polypus, but it begins in some other

texture, and reaching the interior, and being covered by mucous membrane, it assumes something of the appearance of that structure, from the usual laws of growth affecting tumors. Thus, in this preparation of fibrous tumor of the upper maxillary bone, you may see the external part firm and fibrous, and looking exactly like the gum in which it grew; the middle of the tumor is in great measure osseous, and the interior, growing into the cavity of the antrum, is soft, and exactly like a gelatinous or soft fibrous polypus projecting inwards with a narrow neck. Cancerous or fungous diseases may thus spread into the nose from any of the surrounding parts; in this case you see a fungous growth filling the nostril, from cancer of the upper part of the nose; here you may see all the cells and cavities of the nose filled with fungous matter from similar disease of the cheek, the æthmoid and sphenoid bones changed, and the dura mater and even the brain beginning to be altered in their texture; and the fungus may even grow from the orbit, as in this preparation, where the medullary tumor filling that cavity has altered the bones of the nose; and you may see especially the upper spongy bone altered and enlarged, so that it might easily have been taken for polypus growing in that situation, and this also has extended to the dura mater and brain. Most frequently the disease commences in the maxillary bone or its periosteum, and the tumor grows in the antrum, and thence extends to the nose or inside of the cheek and orbit; first, where there is least resistance, and afterwards to the cheek and palate, where the parts are harder in texture. If the tumor grows in this manner from the antrum or bone, it immediately expands in the nostril, as if it grew from a pedicle like a polypus, because its growth is under no restraint, and its texture becomes also from the same reason softer and more vascular. I do not wish to deny altogether the existence of a fungous or medullary polypus, growing from the mucous membrane alone in the first instance, because I know no reason why it should not form there, as it does in the skin, but I have never seen one in its early growth, so as to be certain of the fact; and it is impossible to say, in a later stage, when all the other textures are altered, as in many of these preparations, in which of them the morbid action may have originated, though I believe it to be generally, as I have just remarked, in the bone or periosteum.

Diagnosis.—When a fungous tumor projects into the nostril, it is very often difficult to distinguish it from the fibrous tumor; it is usually softer and redder, and less smooth and shining on the surface, looking more like granulations; and it also bleeds more spontaneously, and the hæmor-

rhage is greater if it is meddled with, which circumstances seldom occur with a fibrous polypus till it has occasioned much distortion, and has begun to change its own nature by softening, while they may be observed very early in the malignant fungus: later in the progress of the fibrous polypus, as we have already seen, it is very difficult to know one disease from the other till after death, when we may be tolerably confident, if the alteration is confined to the mucous membrane, and there is no sign of contamination, of which there is plenty of evidence in many of the published cases of supposed fibrous polypus, but really fungous disease of the bones.

Treatment.—In almost every instance you will do wrong to meddle with medullary disease in the nose, as, among the delicate and intricate textures in the nostril, you will scarcely ever recognise the nature of the tumor early enough to insulate it by removal from the uncontaminated parts; and if any operation of this kind is unsuccessful, it is almost certain to accelerate the growth of what remains, by the local and general irritation which it excites. Where you are doubtful of the nature of the apparently polypos growth, it will be right to extract it on the supposition of its innocent nature, and not to repeat the operation if there is reason to alter this opinion. Sometimes this is not followed by much hæmorrhage, as in the woman under Mr. Keate's care, whom you have seen; but this bleeding is sometimes enormous, and should at once be considered as strong evidence of the destructive nature of the disease. I have known a boy nearly destroyed in another hospital by the loss of blood after two unsuccessful attempts to extirpate a soft growth by forceps, after which my friend who was the operator tried to tie the external carotid artery, but was obliged by the boy to withdraw the ligature after it had been passed under the vessel; he meant after this to have removed what bone seemed implicated through an incision in the nose, but I believe the operation was never performed.

Where there seems fair ground to hope that every diseased part could be removed, it would doubtless be proper to attempt the removal of the tumor, which some of you have had an opportunity of seeing done in the child from whom some of the preparations on the table were taken, an account of whose case I will read to you. The child, four years of age, was admitted under Sir B. Brodie's care, October 30th, 1839, with a firm inelastic tumor, larger than a walnut, distending the left nostril, and extending nearly as high as the inner canthus of the eye, and inferiorly as far as the alveolar process, and laterally there is an indistinct sulcus felt between the tumor and the malar prominence, as if the tumor

had extended itself under the ala nasi over the maxillary bone, as far as the bicuspid tooth. The tumor does not project through the nostril, and the small portion that is visible at that opening is of a dark reddish ash colour. The probe may be passed between the tumor and the septum, and between it and the floor of the nostril, but on the outer side of the tumor, between it and the maxillary bone, it cannot be passed, as if prevented either by its attachment to the inside of that bone, or by its projecting from the antrum. The skin covering this side of the nose is tense, shining, and slightly reddened, but not otherwise altered in appearance. There is a little purulent secretion from the inner canthus of the eye, and the tears run over the cheek; the right nostril is quite free, and the tumor does not extend so far back as to reach the fauces: the child is cheerful, and its health does not appear to have suffered.

The mother states that the first thing she perceived was "a small pimple" between three and four months ago, and that a short time afterwards a boy struck him, and his nose bled very much, and that this, which she calls a pimple, has gradually enlarged ever since, but the enlargement has been more rapid lately, and it has bled occasionally, and in the week previous to the operation the increase was very perceptible.

Now in this case the nature of the tumor scarcely admitted of any doubt, but as it was perhaps confined to the front of the nose, and there was no apparent disease of the antrum, it was thought right on consultation to afford the only possible chance of saving the child's life by endeavouring to remove the diseased parts, together with the bone, if it seemed affected. The tumor was therefore removed on the 9th of Nov., together with a portion of skin which was attached to the tumor where it most distended the ala nasi, and chloride of zinc was afterwards applied to the surface of bone, from which it appeared to grow on the outside of the nostril.

The part continued free from any return of disease for some months, and on the whole I think the operation prolonged the child's life, although it was ultimately unsuccessful, by removing for a time the local irritation of the tumor. Its structure, as you may see in the preparation, was that of a firm cartilaginous or gristly substance, like ordinary scirrhus, or like fibrous cartilage to a certain degree.

From the end of November to the end of January, when the child left the hospital, he continued to improve in health, and the nose appeared free from disease, except that there was a portion of bone to exfoliate from the action of the caustic. On February 19th he was readmitted, looking pale and anxious, and scarcely able to

move any of his limbs, and he complained of much pain in them; the abdomen was large and tender; the skin hot and dry, and the tongue furred; and the nostril was full of tenacious mucus, with some coagulated blood. The friends stated that he had a fall a fortnight previously, since which time his nose has bled profusely on several occasions, and he has rapidly declined in health.

After this the paraplegia increased, and sloughing took place in the nose and cheek, with a return of morbid structure in the part; and towards the end of March the glands about the left ear enlarged, and a tumor was felt at the extremity of the sternum; and on the 12th of May he died.

On examination of the body it was found, as these preparations show you, that the tumor, wherever it may have originated, had produced a good deal of alteration in the parts around the nose. You may see the maxillary bone softened, and the antrum filled with morbid growth; the sphænoid and æthmoid bones are similarly affected, with the dura mater lining them, and the cells are lost in the new growth, which fills all the upper part of the nose. The palate and left side of the mouth are in a state of gangrene. You may perceive some solid white matter extending in the sphænoid fossa to the temple, under the zygoma, and a little piece coming in contact with the sphænoid bone has produced a hole through it, so that the tumor formed a prominence in the interior of the cranium; every structure in this way yields before such a growth, and is implicated in it. The tumor at the end of the sternum is a firm, semi-cartilaginous mass, growing from the covering of the ensiform cartilage, and entirely surrounding the cartilage itself, which is not yet altered. This tumor is only one out of many others, I might almost say hundreds, which are formed on the bones: one of large size was formed on the periosteum of the inside of the ilium, but they were most numerous along the whole line of the vertebræ, and along almost all the ribs, and you will see in the preparation that from the periosteum the disease has, in several vertebræ in this section, contaminated the osseous texture of the bodies of the bones, while the intervertebral cartilages have hitherto resisted the morbid influence. These tumors around and in the bones, gave rise, no doubt, to the paralysis of all the limbs. The vertebræ most affected were those of the back, and from their front part a great mass of the same hard substance, like cartilage or scirrhus, has projected forwards in the centre of the chest, whence it extended some way into the roots and centre of the lungs, and in some parts of the lungs there are separate tubercles under the pleura, of exactly the same appearance.

I am not aware that any tubercles were found in any of the other viscera.

It is singular that the malignant influence should have been nearly confined to the bones, or rather to the periosteum of the bones, and also that even in those parts which were not immediately joined to the bones, so as to acquire their form of structure from this contiguity, the new formation should yet have been of a cartilaginous nature. It shows you, however, that because such new structures are cartilaginous, and bear much resemblance to the natural tissue, they are not therefore to be considered as belonging to a particular genus of tumors, lately spoken of by Müller under the name of enchondroma. There are, no doubt, some diseases of the bones in which cartilage forms a large part, but while some of these are innocent cartilaginous tumors, others, as in this child, will possess other characters, and run through the usual course of malignant disease.

More frequently, when fungous disease appears in the nose, it has the usual characters of medullary or hæmatoid tumors, instead of the firm structure seen in this case. But whatever the variety, the operation is usually impossible, or else the tumor is sure to return, and frequently several other parts of the body have the same disease developed in them. Some years ago Mr. Earle made a similar attempt, by incision into the nose, to remove what was considered a polypus, and had been previously operated on by forceps no less than 23 times in eighteen months, during which the tumor had been growing; but the disease returned in less than two months, and almost every viscus of the chest and abdomen, as well as many parts of the internal cellular texture, was found to be the seat of malignant tumors of medullary character.

I need hardly observe, in conclusion, that besides the injurious effects of repeated losses of blood to considerable amount, such injudicious attempts to eradicate what cannot be got rid of by forceps will only serve to hasten the fatal termination of the case, and that there are scarcely any cases in which the more complete removal by incision can be thought of as likely to afford a chance of success; the result will usually be such as you have seen, even when done early, as in the little child whose case you watched.

LITERARY ANNOUNCEMENT.

A Discourse on the Pendulous Belly, showing it to be a Visceral Affection, and attended with many important consequences in the Human Economy; with Cursory Observations on Diet, Exercise, and the general Management of Health: for the Use of the Dyspeptic. By Richard Frankum, Consulting Surgeon.

OF

DRUGS ON SALE IN THE ENGLISH MARKET,

With their Prices and several Duties.

(From the Official Returns, July 21, 1840.)

	PRICE.		DUTY.		DUTY PAID.	
					In 1839 to last week.	Same time last year.
	£	s. d.	£	s. d.		
Aloes, Barbadoes, D.P. c	15	0 0	to 30	0 0	} B.P. lb 0 2 F. lb 0 8	61,812 64,475
Hepatic (dry) BD. c	5	0 0	10	0 0		
Cape, BD. c	1	15 0	3	10 0		
Anise, Oil of, German, D.P. lb					F. lb 1 4	521
E. I. lb	0	5 0	0	5 6	E. I. 1 4	574
Asafetida, B.D. c	1	10 0	3	10 0	c 6 0	43
Balsam, Canada, D.P. lb	0	1 0	0	1 1	lb 0 1	2,973
Copaiba, BD. lb	0	1 6			c 4 0	410
Peru, BD. lb	0	4 6			lb 1 0	246
Benzoin (best) BD. c	25	0 0	50	0 0	c 4 0	21
Camphor, unrefined, BD. c	12	0 0			c 1 0	189
Cantharides, D.P. lb	6	3 6			lb 1 0	9,776
Caraway, Oil of, D.P. lb	0	9 0			lb 4 0	951
Cascarilla or Eleutheria Bark, D.P.C. lb	3	10 0			lb 0 1	2,356
Cassia, Oil of, BD. lb	0	8 6			lb 1 4	1,620
Castor Oil, East India, BD. lb	0	0 4	0	0 10	c 1 3	4,098
West I. (bottle) D.P. 1½ lb						3,551
Castoreum, American lb	0	17 0	0	18 0	} lb 0 6	425 467
D.P. Hudson's Bay lb	0	18 0	1	0 0		
Russian lb		none				
Catechu, BD. Pale c	1	1 0			} c 1 0	34,286 23,502
Dark c	1	6 0				
Cinchona Bark, Pale (Crown) lb	0	2 0	0	3 6	} lb 0 1	25,055 31,737
BD. Red lb	0	2 0	0	4 0		
Yellow lb	0	4 0	0	4 4	} lb 0 2	3,920 5,604
Colocynth, Turkey lb	0	1 6	0	2 9		
D.P. Mogadore lb	0	1 0			lb 0 2	6,908
Calumba Root, BD. c	0	12 0	1	15 0	lb 0 6	20,079
Cubebs, BD. c	3	0 0	3	10 0	c 4 0	29
Gamboge, BD. c	5	0 0	15	0 0	c 4 0	181
Gentian, D.P. c	1	10 0			c 6 0	1
Guaiacum, D.P. lb	0	1 0	0	3 0	} c 6 0	4,455 4,819
Gum Arabic, Turkey, fine, D.P. c	12	0 0	13	0 0		
Do. seconds, D.P. c	7	0 0	7	10 0	} c 6 0	3,271 3,770
Barbary, brown, BD. c	1	17 0	1	18 0		
Do. white, D.P. c	5	10 0			} c 6 0	12,838 12,761
E. I. fine yellow, BD. c	2	5 0	2	14 0		
Do. dark brown, B.D. c	1	15 0	2	5 0	c 6 0	147
Senegal garblings, D.P. c	3	0 0			lb 0 1	1,925
Tragacanth, D.P. c	8	0 0	12	0 0	lb 1 0	4,027
Iceland Moss (Lichen), D.P. lb	0	0 2½	0	0 3	lb 0 6	27,009
Ipecacuanha Root, B.D. lb	0	1 3	0	1 6	} lb 0 3	9,219 6,949
Jalap, BD. lb	0	2 9				
Manna, flaky, BD. lb	0	3 0	0	3 3	oz 6 0	1,077
Sicilian, BD. lb					c 6 0	95
Musk, China, BD. oz	1	0 0	3	10 0	lb 2 6	272
Myrrh, East India, BD. c	5	0 0	14	0 0	lb 1 0	23,979
Turkey, BD. c	2	0 0	11	10 0	lb 4 0	3,408
Nux Vomica, BD. lb	0	8 0	0	9 0	lb 0 1	187,070
Opium, Turkey, BD. lb	0	9 0			lb 1 0	8,040
Peppermint, Oil of, F. BD. lb	0	10 6			} F. lb 1 0	15,478 1,599
Quicksilver, BD. lb	0	3 11				
Rhubarb, East India, BD. lb	0	6 0	0	8 0	} lb 0 6	68,067 67,880
Dutch, trimmed, D.P. lb	0	8 0	0	9 0		
Russian, BD. lb	0	7 6	0	8 6	} lb 2 6	6,915 5,316
Saffron, French, BD. lb						
Spanish lb	1	0 0			E. I. lb 0 6	50,232
Sarsaparilla, Honduras, BD. lb	0	1 0	0	1 9	} Other sorts 0 6	41,713 46,238
Lisbon, BD. lb	0	2 0				
Scammony, Smyrna, D.P. lb						
Aleppo lb	0	18 0	1	0 0		
Senna, East India, BD. lb	0	0 3	0	0 4		
Alexandria, D.P. lb	0	1 6	0	1 8		
Smyrna, D.P. lb	0	1 0	0	1 3		
Tripoli, D.P. lb	0	1 0	0	1 3		

‡§§ BD. In Bond.—c. Cwt.—B. P. British Possessions.—F. Foreign.—D. P. Duty paid.

MR. TOMES ON THE STRUCTURE OF THE TEETH

IN REPLY TO MR. OWEN.

To the Editor of the Medical Gazette.

SIR,

IN the GAZETTE for July 17th, 1840, is a long letter from Mr. Owen, relating principally to a controversy between himself and Mr. Nasmyth, but containing in the latter part some statements bearing upon a letter of mine, published in the Gazette of the previous week. Mr. Owen there says, that upon my first interview with him, he shewed me sections of *Megatherium* and *Acerodus* tooth, as supporting the analogy of dental and osseous structure. This is not a true statement.

The only specimens he showed me were the two spoken of in my letter, neither of which were specimens of fossil teeth: moreover, he denied the analogy of the dental and osseous tissues, and it was not till I had shown him many specimens, demonstrating that dental tubuli often enlarge laterally into a more or less oblong cavity, from which, sending off numerous delicate tubuli in various directions—in fact, the tubuli taking the form of osseous corpuscles—specimens also in which the teeth were naturally ankylosed to the jaw as in some fish, demonstrating that in a section the precise points of junction of the jaw and teeth could not be shown, the structures were so like each other—it was not till I had shown him these, that he acknowledged the intimate relations of the two structures.

At this same interview, Mr. Owen, instead of showing me specimens of *Megatherium* and *Acerodus* teeth, gave me a large fragment of *Megatherium* tooth to examine, and asked me to make him a section from it. That he shewed a section of this same tooth is quite true, but it was some three or four months after the above date, and then the section he showed me was one of my own preparing. It was at a date even later than this, that he gave me the fragment of *Acerodus* tooth.

At this same first interview, as stated in my letter, Mr. Owen told me of Retzius's discoveries, which Mr. Owen

denies my having acknowledged, though the acknowledgment was printed in the Gazette of the week previous to the one which contains Mr. Owen's letter. At the same time, Mr. Owen showed me the engravings of dental structure, taken from Retzius's plates, and contained in Müller's Arch.; but I must also add that, upon my asking Mr. Owen several questions relating to Retzius's discoveries, he acknowledged that he had not read the account carefully, but said he would do so, and he then told me he was having the plates copied on an enlarged scale, and one plate had been so copied. Mr. Owen says in his letter, that he had more than a hundred specimens of teeth for the microscope, before I became known to him. This he did not tell me; indeed he only spoke of the two specimens which he then showed me, as stated in my letter.

The sections of teeth exhibited with the microscope, by Mr. Clift, at the College of Surgeons, by Mr. Owen's order, some days subsequent to his lecture on the subject, were almost exclusively mine, or made by me, excepting the two of which Mr. Clift gave the history narrated in my letter. Again, Mr. Owen, before this exhibition, borrowed of me numerous specimens, upon several occasions, to show at parties. Upon one of these occasions, Mr. Owen took my specimens to the Bishop of Norwich's Linnæan *soirée*, and there exhibited them. Mr. Owen may, perhaps, recollect this, especially as they were recognized as mine by a friend; before which recognition Mr. Owen seemed to be regarding them as his own.

I am quite aware that Mr. Owen had many specimens made, but I believe they were all made subsequent to his having seen mine, and subsequent to his having received many of mine as presents. If Mr. Owen had so many specimens it was strange he did not show them, and it was still more strange he should borrow mine to show.

This, and my previous letter, is but a plain and honest statement of facts

which can in no way be disproved; not that I doubt Mr. Owen's ability so to confuse the subject, by the style of writing which he has chosen, that it may be difficult for any person to form a fair judgment of the matter; for which reasons I shall decline any further communication on the subject.

Sir, may I beg you will insert the following letter, which I received from an old and valued friend who lived with me at the time to which my letters refer.

I am, sir,

Your obedient servant,

JOHN TOMES.

41, Mortimer Street,
Cavendish Square,

Gay Street, Bath,
July 22, 1840.

MY DEAR TOMES,

ON carefully reading and collating the GAZETTE of July 17, with the previous one, there appear several misstatements on both sides, which, from my living with you for many months both before and after the time mentioned, I can rectify; so would now recal the facts to you so far as my memory serves me. You began the study late in the year 1837, having been excited thereto (I think) from seeing the sections of bone exhibited at Dr. Todd's lectures. After many trials you made some sections of teeth, which were shown to the class in the earlier part of the course; a syllabus of the course would give almost the exact period: you then worked at little else for some months, and at length obtained that beautifully injected rabbit's incisor, and was persuaded to show it, with many others, to Mr. Bell. The subject was so commonly known among the King's College students that one of the physiological prize questions was on the dental microscopic structure. My firm impression is, that Mr. Owen, when lecturing on the teeth in 1838, did not mention his having at all personally confirmed Retzius' views, (though the diagrams then displayed were copied

from Retzius,) but most positively he mentioned you had done so. Of the specimens exhibited by Mr. Clift in the little room looking into Portugal Street, *much the larger number*, if not all, except the two which he said were given to him by Retzius, had been prepared by you; each of them was well known to me, who could not mistake those I had seen cut and put up, besides knowing their microscopic appearances.

You seem to have forgotten your coming home and narrating several conversations between Mr. Owen and yourself, on the analogy between teeth and bone, of which analogy you said you had much difficulty to persuade him, until you shewed him some sections of maxillary or palatine teeth of fish, that were naturally ankylosed with the bone: the names I know not. I am sure Mr. Owen's memory misleads him when he states that he shewed you preparations of the Megatherium and Acrodus teeth, at least preparations fitted for microscope, since you, on the receipt of some fragments, at once made him sections. Shortly afterwards Mr. Owen said that he should himself follow out the structure of fossil teeth, upon which you then ceased to work at this branch of the subject, considering that, in honour, you could do nothing with it. Mr. Owen treats you unjustly in trying to show that you kept back his having told you of Retzius's investigations, whereas you expressly mention it at the top of page 633 of the GAZETTE of July 10th, 1840, and also state that to Mr. Owen you were indebted for your first knowledge of the researches of Retzius. At any rate, you have the satisfaction of knowing, that to these investigations you were impelled by a pure desire of knowledge, and derived no ideas from any one else till you found that your observations were confirmed by Retzius, who, like yourself, was an independent observer.

I am, yours most faithfully,

JOHN S. BARTRUM.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, AUGUST 7, 1840.

LECTURES
ON THE
PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School,

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISEASES OF JOINTS, *continued.* The KNEE JOINT—ANCHYLOSIS—LOOSE CARTILAGES—INJURIES of the HEAD—WOUNDS of the SCALP.—*Their Nature and Treatment.*

THE KNEE JOINT.

As the knee is the joint where we are most familiar with *white swelling*, it is necessary to make a few observations on this particular form of disease. Again, we say that the disease may commence in the hard or the soft tissues. In the latter, it mainly consists of chronic inflammation of the fibro-synovial capsule: to this tissue it may have extended from within, or without the joint. A disease of the tibial bursa, or inflammation at the sides of the patella, between the end of the triceps and the femur, may irritate the interior of the joint; an abscess, a fracture, or an amputation, may produce a similar effect; but the opposite course of proceeding is most frequent. The disease generally commences within the fibrous capsule, and the reason is obvious. Placed between the front of the tibia and the ligamentum patellæ, the cellulo-adipose mass, constituting the adipose ligament, is exposed to pressure in almost every motion of the joint; the sub-condyloid synovial membrane is similarly exposed; the fibro-cartilages and ligaments are constantly compressed, dragged or twisted; each of these may serve as a primary seat of irritation or inflammation. It may, however, arise upon the free surfaces, or deeper parts of the joint. A blow,

a fall, a long walk, or irregular motion, may excite irritation in the synovial membrane, or the cartilages. If the disease commence in the bone, it may be consequent upon caries, necrosis, tubercular masses, abscesses, or osteitis. The cartilages may be separated, and fungous granulations may spring up from the bony surfaces; a fetid purulent fluid may fill the joint, and abscesses may be developed around it.

Symptoms.—When this disease is confined to the soft parts, we recognise it by the following characters:—the pain is rarely very acute; neither is motion impossible: the patient has noticed swelling, stiffness, and weakness in the joint, before he has suffered much pain: persons may remain in this condition for weeks or even months without seeking for advice, and may continue their ordinary occupation. When we examine the knee, we find it larger than that of the opposite side; pressure upon it is sometimes painful: it may be extended and flexed without much aggravation of suffering; the patella is moveable, but is raised in front of the condyles; and the swelling appears irregular, in consequence of being bound down by ligaments; it is elastic, but, if carefully examined, fluctuation cannot be distinguished: this condition constitutes the *fungus articulorum* of Raymer. If the cartilages have suffered first, pain has preceded the swelling; at first, however, only during motion. The severity of the pain keeps pace with the progress of the disease; at last it is so severe, that the patient cries out upon the slightest motion of the joint. If there be much swelling we do not always find an irregular projection on each side of the patella; if we do, and if it comprehend the whole joint, fluctuation may be felt, and the general health has then usually suffered. If the disease commence in the sub-cartilaginous surface of the bone, it very much resembles the preceding form; except that the pain, at first, is less acute, more extended, and less aggravated by

slight motion; the intra-articular effusion and the tumefaction of the soft parts are less rapidly developed. Caries, necrosis, and purulent, or cheesy, deposits in the structure of bone, are known by obtuse deep-seated pain, which at first is not increased by pressure or motion. The tumefaction, which supervenes slowly, is unequal; it is sometimes manifested at the extremity of the femur; at other times, of the tibia, whose bulk is sensibly increased: the patella is soon fixed.

In a case I lately observed after death, the knee was in extreme flexion; both condyles of the femur were sensibly enlarged; the articular capsule had become adherent to the diarthrodial cartilages; the patella was adherent to the outer condyle. The cartilages were softened and thinned; they could be torn off from the osseous surfaces. The semi-lunar cartilages and crucial ligaments were converted into a homogeneous lard-like mass; pus was found at several points, external to the joint, and fistulous canals communicated with the surface.

Prognosis.—When very little advanced, these affections of the knee are extremely serious. Those comparatively superficial, the least so; the more deep-seated are rarely cured, except by ankylosis. If left to itself, and motion be not prevented, general reaction comes on, the viscera suffer, and death is almost inevitable.

Treatment.—In the treatment of this affection, what we have already said of blood-letting, as well as large blisters, perfectly applies; but I may add, that to lessen the chances of strangury, after the application of blisters, the surface may be powdered with camphor. The actual cautery may be applied at any point with advantage; but as the angles of bones are here near the surface, we must employ it with more reserve than at the hip joint. Again, in making caustic issues, care must be taken to place them where there is a sufficient cushion of soft parts to keep up an abundant suppuration. In applying compression care must be taken to fill up all the hollows with cotton, otherwise prominent points will suffer. Of all these means *large blisters*, moxas, cauterisation, and compression, properly employed, will most often arrest the progress of white swelling confined to the soft parts, while blood-letting and caustic issues will exercise the most beneficial influence upon the affection of the hard parts. Nothing, however, in treatment, is more important than position. If the fibrous capsule alone is affected, it is less indispensable, though then it is desirable not to move the limb further than comfort may require; but when the deeper tissues are affected, it cannot be dispensed with: in those cases, ankylosis is the only

probable cure, and extension should therefore be permanent and complete. When other means have failed, resection of the articular surfaces has been occasionally resorted to, and sometimes successfully, but these occasional instances of success should not induce us to undertake too readily such an operation. It is very dangerous in itself, and under the most fortunate circumstances the patient will have a loose feeble joint, which will be of little use, or, what is better, complete ankylosis. Thus the dangers of this operation, and the little use that can be made of the limb, even when the operation succeeds, should induce us seriously to consider whether, when recourse can be had to amputation, we should resort to resection.

ANKYLOSIS.

Ankylosis is a condition which consists in a more or less complete loss of motion of a joint; if it be complete, it is termed *true*, if it is incomplete it is called *false*. When ankylosis is *true*, the bones are united, so as to form a single piece, and motion is utterly destroyed; the synovial membrane, the diarthrodial cartilages, and the compact surface of the bone, have entirely disappeared; the spongy substance of the extremity of one bone is continuous with that of the other. When it is *false* the bones are not united, they enjoy a certain mobility; the soft parts alone are affected, and motion at the part may be restored. Probably, a better division may be made, by shewing, that motion in a joint may be suspended by changes occurring within the joint, or around it. The changes within the joint are caused by adhesions of the synovial membrane, or by the union of the bony surfaces, after the disappearance of the articular cartilages; those external to the joint are affections of ligaments, tendons, muscles, and the soft parts around. Vidal proposed to divide it into intra- and extra-capsular, and it seems to me a specific and unobjectionable method. If we adopt it, we have then two varieties of intra-capsular ankylosis; in the first, the bony tissues are mediately united, that is, by means of the inflamed synovial membrane; it sometimes occurs, as a consequence of contusions, sprains, dislocations, wounds, or any thing capable of setting up inflammatory action within the joint. In this variety, which might be termed *membranous intra-capsular ankylosis*, the joint may still retain some motion, and all hope of cure may not be lost. In the second variety the articular osseous extremities are in immediate and complete union; the cartilages are destroyed, and motion is completely lost; this might be termed *osseous intra-capsular ankylosis*. In this variety greater mischief has been sus-

tained by the joint; caries, necrosis, tubercular disease, or *white swelling*, has usually preceded it. We can, in this variety, saw, longitudinally, through the joint, without finding any line of demarcation to indicate where the articular surfaces formerly existed: this condition is incurable. When the disease is *extra capsular*, the joint may, more or less, completely retain its integrity; the bony extremities, the articular cartilages, and synovial membrane, may be, more or less, completely intact; the organs which interfere with motion are the ligaments, tendons, muscles, and cellular tissue.

One particular position, long sustained, may produce this condition; it is for this reason that the Fakirs of India are so often reduced to this state: their religion condemns them for long periods to an unchanging attitude, which at last, by disease, becomes a permanent condition. Paralysis, or any disease, which compels a long persistence in a particular position, may equally produce it; this is seen in many bed-ridden people. The ligaments, tendons, and muscles, become permanently contracted. But apposition of surfaces alone does not seem to be enough to procure intra-capsular ankylosis. Cruveilhier mentions a case where complete ankylosis of the right temporo-maxillary articulation, had condemned the left side of the face to total inaction for eighty-three years, but the synovial surface was free. Walther mentions a similar case. Kuhnholz saw, in a woman of 60, a partial union of the body of the lower jaw with the upper; it was congenital; yet, although immoveable through life, the temporo maxillary articulations were altogether free at her death.

All joints may be ankylosed, but the ginglymoid suffer most frequently; those between the diarthrodial and synarthrodial may be affected; as the vertebra and the coccyx. One joint or many may suffer; in the former case the cause may be local; in the latter it is usually general. It may affect every joint in the body. S. Cooper mentions a case of universal ankylosis. In the history of the Academy of Sciences for 1716, is the case of a child of twenty-three months. Larrey, of Toulouse, presented to the Faculty of Medicine of Paris, the skeleton of a fisherman, in which there is ankylosis of almost all the joints. An officer died at Metz, in 1802, aged 50, who, as a consequence of the fatigues of war, in a cold damp climate, had rheumatism, which successively determined ankylosis of all his joints. The skeleton of that patient forms a single piece, the temporo-maxillary articulations did not escape, and it was necessary to extract two incisor teeth to give him food. The occurrence of ankylosis at the articulation of the lower jaw is very uncommon. Colum-

bus mentions one case. Meckel had another. Besides those cases, there is one at Berlin, in a man of 50. Portal mentions a case where all the joints, except that, had suffered, the patient having kept his bed for fourteen years. At Berlin, there is a skeleton where every joint is ankylosed, except the lower jaw, the pubis, and clavicles; the patient lived 26 years in this miserable condition.

Difference of opinion still exists on the subject of complete ankylosis of the pubis. Watler believes it to be possible; Meckel, Van de Wymperse, Hildebrand, and Blumenbach, hold it to be very rare. Pineau and Louis doubt even its occasional existence. Soemmering and Hunter never saw it. A single example is not to be found in the Cabinet du Roi described by Daubenton. Sandifort (Observat. Anat. Path.) says he has observed it; but his description would rather lead to the conclusion that there was ossific matter deposited in the connecting cartilage, than that the cartilage had been removed, and bony union of one branch of the pubis to the other had taken place.

However incomplete may be the history of cases of ankylosis, they are sufficient to warrant us in presuming that the remote cause was rheumatism. The remark of Van de Wymperse (Dissert. de Ankylosi) of the much greater frequency of ankylosis in man than woman, also favours this conclusion.

Ankylosis, of itself, is not a dangerous condition; it is more or less inconvenient, according to the joint affected, and the position in which it has taken place. Thus it is as much more inconvenient as it affects a large joint with much latitude of motion; again, ankylosis of the lower jaw materially interferes with the digestive functions, by preventing mastication and insalivation, or even by preventing the introduction of food into the month.

Treatment.—The treatment of ankylosis varies; it is sometimes a fortunate termination of dangerous articular disease, and should then be favoured, as far as possible, by absolute rest, by mitigating the symptoms which accompany or complicate the principal disease, and by giving the most comfortable and desirable position to the part. Thus we would endeavour, if the lower jaw were to suffer, to have it somewhat depressed; the thigh and the leg would be best in a state of extension; the foot in a right angle with the leg, the toes in extension; the arm should be depressed and a little removed from the trunk, the forearm upon the arm should be in a state of semi-flexion, and between pronation and supination, the hand in a line with the forearm, and the fingers slightly flexed. In some cases we are obliged to modify

these positions, or even to let the patient place the limb in the situation most comfortable to himself.

The object of treatment in incomplete anchylosis is to restore to the limb the motion it has lost. In those diseases which may make a joint stiff when left long in one position, as in fracture; to prevent it we lessen inflammatory action of the soft parts, and impress upon the part as much motion as can be safely borne; and this is especially necessary in the ginglymoid joints, from their great facility in becoming anchylosed. When false or incomplete anchylosis exists, we must seek to restore the ligaments, tendons, and muscles, to their natural flexibility and extensibility; for this purpose "douches" of various kinds, vapour baths, and relaxing applications, have been employed, together with friction and shampooing, and in slight cases they are useful in relaxing the parts: motion must then be employed in the sense necessary to overcome the contraction: by this means the ligaments and tendons sometimes yield, and motion is restored. As we have formerly seen, the tendons, and even the ligaments, may now and then be cut, so as to accomplish the end more speedily, but it must be associated with mechanical extension or flexion according to the case. Of late, in cases of incomplete anchylosis, a person of the name of Louvrier has been employing force, suddenly applied, as a means of cure: that a sufficient force can be applied to rupture almost any bonds of union, the cases upon which he has operated are sufficient evidence; that such violence may produce incalculable mischief is again proved by the results of the same cases; that a few cases may do well is also shown; but this we knew before the advent of M. Louvrier. Meekren published the case of a man who had, no doubt, false anchylosis of the elbow, which resisted every mode of treatment: one day he had a fall upon that arm, and motion was restored.

The motion which we impress upon the limb should be cautiously used; if incautiously applied it will produce pain, and may occasion inflammation. Often, when motion is first impressed, in such cases, a crepitation is perceived, but it gradually disappears. The surgeon himself, or an intelligent assistant, should attend to the process of moving; it should not be left to the patient himself, because the fear of pain will prevent him from doing what is proper, and therefore it will be inefficacious.

To cure such cases much patience and perseverance are necessary; with them many reputed incurable cases may yield. A multitude of examples of this might be given. In the cure of cases of complete

anchylosis, our brethren in America have resorted to a bold and novel practice. In a case of anchylosis of the hip, Dr Barton, of Philadelphia, in 1827, restored motion, by making an artificial joint; he cut down upon the neck of the femur, sawed out a portion of it, and kept up motion at the part. This example has also found followers; but I trust none of you will follow it until you have taken all necessary means to assure yourself that such an operation is in any case justifiable.

LOOSE CARTILAGES.

Loose cartilages are not unfrequently found in joints, but they seem to manifest a greater predilection for ginglymoidal than orbicular articulations. They may be free and floating; they may be attached, or some may be found in each condition in a single joint. The plate in Cruveilhier (*Anat. Path.*) shews some pediculated, some without pedicle, just projecting into the joint, and some entirely free.

The joints in which they are most commonly found are the temporo-maxillary, where Haller saw 20, (*Prog. de indur. &c.*); the elbow, where Robert found 18 or 20; and the knee, where Malgaigne saw 60. The knee, however, is the situation where, in the living body, they most frequently come under our observation. Generally we hold, that the first example of the disease was that of Paré (1558); that of Pechlin, (1661,) seems to have been the second. Succeeding observers, such as Henkel, Simson, (*Edin. Essays*), Hewitt, (*Raimairus de fungo Articulorum*), Ford, (*Med. Observations and Enquiries*), Bromfield, Theden, Desault, and others, have described a large number.

In size these bodies vary very much; some are not larger than a barley corn, others, such as that of Paré, may be as large as an almond. Although the surface may occasionally be rough, it is usually smooth and polished: some exceed a cartilage in hardness, others can easily be broken down between the fingers and thumb; the centre is usually the most resistant part: desiccation reduces them almost to nothing. Some specimens so strongly resemble fragments of cartilage, that it is difficult to distinguish one from the other. They contain neither vessel nor laminæ; nor do they exhibit any appearance of texture.

How these bodies are formed is a matter about which there is much difference of opinion. The earliest idea upon the subject was, that they were produced by a precipitation from the synovia, like vesical calculi from the urine: this opinion induced Paré to call them stones. The next opinion was, that they were frag-

ments of cartilage accidentally detached. Certainly, in the knee examined by Monro, a depression on the articular surfaces seemed to point out the surfaces from which they had been exfoliated or detached. Professor Schreger of Erlangen (Beobacht, &c. Erlangen 1813,) believed they proceeded (by exfoliation) from the cartilages of the joint, or were fragments of the synovial membrane changed into cartilage, and afterwards detached; yet he assimilates them to inorganic concretions, like biliary and urinary calculi, because they increase like them by the juxta-position of successive layers, the elements of which are furnished by the synovia. What induces him to come to that conclusion is, the stratified structure which he thinks he has observed in those cartilages, as well as the absence of nutritive vessels, even when they adhere to the synovial membrane. The more probable explanation is that which supposes their formation external to the joint, and afterwards pushing the synovial membrane before them so as to procure a covering, and when far advanced into the joint, a pedicle. This opinion, promulgated by Hunter, (Transactions of a Society, &c., vol. i.) adopted by Sir Astley Cooper, and Beclard, is formally opposed to previous hypotheses. It explains the existence of a pedicle and their mode of attachment. Cruveilhier's plate shews the pedicle in different stages of its existence; in some ready to give way, and allow the cartilage to move freely in the joint; in others scarcely raising the synovial membrane. Sir B. Brodie believes them to be a consequence of a mass of fibrine or a clot of blood having been effused into a joint, either as a consequence of contusion or other cause, and that this fibrine ultimately acquires the characters we have mentioned. There is no question that fibrine may undergo certain transformations; it is possible that it may undergo those necessary to constitute a loose cartilage.

I believe it is possible that each of these explanations may be occasionally right, and that neither can be adopted so as to exclude all the rest; I conceive that they may sometimes be formed without, sometimes within the synovial capsule. I believe that the elements of such concretions may exist in the synovial fluid, or that they may sometimes be produced by a chipping off or exfoliation of cartilage; but I apprehend that in the greater number of cases they are a consequence of violence inflicted upon the joint; that violence may cause an effusion of blood, or it may set up slight inflammatory action within or without the synovial capsule, and this action may determine the secretion of fibrine; in this respect they are not unlike similiar

concretions in bursæ or the sheaths of tendons.

Symptoms.—It is not usually difficult to distinguish the symptoms of loose cartilages. So long as they remain in a cul-de-sac nothing reveals their existence; but when a false step or shock brings them between the articular surfaces, an extremely sudden acute pain, threatening syncope, is developed, and the patient usually falls to the ground. Commonly in a few minutes this pain gradually subsides, but sometimes it may continue for an hour or even more, after which the patient can get up and walk as if nothing had happened. This accident may be renewed more or less frequently; the sensibility is increased, and not so soon dissipated, as the accident becomes more frequent. In some persons the cartilage, at last, is so extremely moveable, that walking is almost impracticable. Still although these symptoms be sufficiently significant, we have no certainty until we have felt the cartilage itself. If we examine the joint carefully we generally discover the body slipping from under the finger like the pip of an apple, and occasioning some pain: the patient usually discovers the object himself. At the knee-joint it is at the inside that it is commonly met with.

Prognosis.—These bodies may remain for years in the sacs which contain them; but a shock having precipitated them from their resting place, and thrown them between the articular surfaces, then suffering follows; they may not return to their former nook, and the chances of their interfering with motion are then imminent. When they become sources of acute irritation, the joint itself may at last suffer, as in Knox's case, or acute or chronic inflammation may be excited.

Treatment.—The idea of extracting these bodies is one which naturally arises in the mind of the surgeon, but the consequences of opening the joint occur quite as naturally. Richerand says, of twelve cases in which he had performed the operation, four had died in consequence of it. Bell preferred amputation of the limb. These feelings and apprehensions have induced surgeons to look for some palliatory means of treating the disease; of these, compression is the only one which can be properly substituted for it. We endeavour to fix the body at a point external to the articular surfaces. Middleton believed that, when thus fixed, absorption or dissolution might occur; but we have no facts to prove the possibility of either. Middleton has successfully treated the disease by compression, (Raimarius de Fungi, p. 27—54); so has Gooch, (Cases in Surgery); Hey, (Practical Observations, p. 342), who used a laced elastic knee-cap; and Boyer.

When we use compression, we must first coax the cartilage into a cul-de-sac, above, or on the sides of the patella, if the knee be affected, and apply upon it the knee-cap, which will not then require to be much constricted. Unless this apparatus fail, we need not resort to absolute rest, or to the application of an apparatus for preventing motion, which will often fail. Raimarius' cases show this: Averill (Edin. Med. and Surg. Journal) mentions a case, in which Ballingall had used similar means without success.

When extraction has become necessary, it is easily performed; but one thing must particularly be borne in mind—synovial inflammation may follow; therefore all prudent means should be taken to prevent it. Richerand lost four patients; Hewit lost one; Sanson's was not out of danger for months; S. Cooper mentions two deaths; and it would not be difficult to make the catalogue very formidable. At the same time many surgeons have operated frequently without loss; and therefore we are justified in supposing, that in many of the fatal cases the circumstances under which the operation was performed were adverse, that it was carelessly done, or that after-treatment was neglected. The cases which I have seen, with a single exception, (and in that case there was bungling in getting out the cartilage,) have done well, and that very rapidly, without the development of any unfavourable symptom. It is, however, my duty to tell you, that it is an operation not exempt from danger, and that it should not therefore be lightly undertaken. You should not operate without well weighing the circumstances of the case, and telling the patient and his friends, that, though a comparatively painless operation, it is not wholly without risk. If the cartilage occasion only slight inconvenience, advise the patient to bear it; if it interferes much with the functions of the joint, try compression; if that fail, if the inconvenience be great, and irritation be kept up in the joint, you may, provided the cartilage be moveable, undertake the operation; but not until all irritation is dissipated, because I believe that to be a great element of failure. I say *moveable*, because if it be not, the violence done to the joint in the efforts to detach it may be attended with fatal consequences.

The operation being decided on, it may be performed with great facility—it is extremely simple. Most surgeons have very carefully endeavoured to exclude the air, and this they have sought to do by preventing parallelism between the external and the capsular incision. Some have advised that the integument should be drawn upwards; others, that it should be drawn laterally. What is of more importance is

to get the cartilage as far as possible from the articular surfaces, as superficial as possible; then to fix it between the finger and thumb, to transfix it with a needle, or to follow the plan of Averill, (Edin. Med. and Surg. Journal, vol. lx. p. 307), fix it with a metallic ring, which, by making the parts tense, prevents it slipping off under the pressure of the knife. This done, the incision should be fair and as prompt as possible. It should be made perpendicularly upon the cartilage, and its extent should be proportioned to the size of the foreign body. If it do not immediately escape through the opening, it should be seized with a hook, and the pedicle, if there be one, should be snipped with a scissors. The wound is immediately closed with strapping, and perfect rest maintained until the wound is cicatrised. Some persons, for greater security, cover the part with a white of egg bandage, and, if necessary, apply cold. Before the end of a week, or even ten days, the patient should not be allowed to rest on the limb.

Having considered the diseases affecting the system generally, or, at least, several organs or tissues at the same time—having considered successively the diseases of which each tissue in itself is susceptible, and having therefore completed two great divisions of our subject—we shall now proceed to consider the diseases of regions; but as a region, in the ordinary acceptance of the term, may sometimes represent a group of organs, sometimes a single one, we shall limit ourselves rather to the consideration of the organs which the several regions may contain. Our first chapter will furnish an example of the advantage of considering the organ, because a disease may affect at the same time several of its tissues. In the head the connection of the several parts constituting it is so intimate, that almost always the morbid agent affects, simultaneously, several tissues at the same time, and may influence all. Even if an injury be comparatively simple at the outset, it is rarely limited to the tissue first affected. To be convinced of this it is only necessary to observe the composition of the cranium, the integument, the fleshy or fibrous substratum, a flat bone between two fibrous membranes, and the connection between them is very intimate. Their intimacy is still further assured by a large number of blood-vessels and nerves. It must appear singular that the osseous arrangement for the protection of the brain should be such as is favourable in many cases for the extension of injury or disease. In blows upon the head, the bone often protects the brain at the part; but the very fact of its resistance favours concussion. These circumstances render the study of diseases of the cranium very

difficult, because most cases are complicated.

INJURIES OF THE HEAD.

Wounds.—Wounds of the head belong to questions probably the most important in surgery. The injury of the brain which occurs at the moment of the accident, or consecutively, gives them their great importance. It is necessary, therefore, that we should consider them under two points of view, according as the different coverings are affected, or as the brain itself has suffered.

These wounds are never so simple as those of other parts; the proximity of the brain, and the intimate vascular connection between the interior and the exterior, to a certain extent explain the gravity of these wounds. If made by a cutting instrument, they are usually less dangerous than when contused or lacerated: wounds made during surgical operations show this. A wound may be vertical or oblique; a slice may be completely detached, it may adhere by a pedicle. In either case the indication is to bring the parts together, with the view of union by first intention; but where a flap is almost detached, a point of suture may be necessary to assure contact. These are the wounds which usually bleed most freely. If there be much hæmorrhage, it is difficult to apply a ligature; the tissue is lax; the vessels are probably retracted. Stuffing the wound is dangerous, from the irritation which it will seldom fail to occasion. Pressure should not be made on the part itself, unless it can be judiciously applied with the dressing; if it be employed at all, the advantages are best obtained by placing it at a distance, in the course of the bleeding vessel. In some cases we restrain it, by making a complete, where there was only a partial, section of an artery; this is a common resource after opening the temporal artery, when the hæmorrhage is obstinate. In all cases the dressings should be simple, and incapable of creating irritation at the part.

When the instrument by which the wound is inflicted is a pointed one, the bleeding is usually trifling, but the wound is often painful, and the consequences serious; because the general experience is, that those wounds are, more commonly than incised wounds, followed by erysipelas. It has been usual to explain the increased pain, by assuming that nerves have been incompletely divided; but where is the wound in which some nervous filaments have not been incompletely divided? I believe this is not the only cause. It has been recommended that the puncture should be converted into an incision, as a remedy for the pain; but

though this may complete the section of some filaments, it must inevitably leave others incompletely divided. It is true there are on record many cases in which instant and complete relief has been afforded by this means, leading to the previous conclusion; but every surgeon has seen many cases in which it has utterly failed; and it seems to me quite as reasonable to refer the relief to the relaxation which the incisions afford to the part, as to the complete section of certain nervous filaments.

Erysipelas, however, is the dreaded complication of wounds of the scalp. Pott believed that if the wound did not implicate subcutaneous tissues, the erysipelatous affection might creep on, over the ears, the face, and the neck; that if the aponeuroses were implicated, the erysipelas would be limited to the cranium, would neither extend to the eyelids nor the ears; that its colour would be a deep red, whilst a yellowish tint would be the characteristic of the former. That this rule may frequently apply, is probably true; that it will often fail is quite as true, although the contrary has been affirmed by so great a surgeon as Percival Pott.

Nothing is better known, than that spontaneous erysipelas, even when confined to the face, is apt to produce cerebral symptoms; still more is it to be apprehended when it affects the cranium, and has been produced by a wound. Then we fear the advent of cerebral or meningeal inflammation; but aggravated cases of erysipelas of the head and face, accompanied by delirium, do often pass away, without leaving us any reason to suppose that the brain was affected, otherwise than by sympathy. If delirium and stupor may accompany erysipelas without indicating cerebral disease, how are we to assure ourselves, in any case, that cerebral disease is really present? Boyer supposed, that a mode of diagnosis, practically useful, though not infallible, could be chalked out. "The inflammation of the wound," says he, "is not marked before the third or fourth day. It is manifested by redness, pain, and swelling of the lips of the wound. The inflammation extends, and takes an erysipelatous character; frequently fever supervenes, the tongue has a yellowish coating, the head is heavy and painful, there may be stupor or delirium. These symptoms may induce a suspicion of meningitis; but we know that the symptoms may be referred to the wound, by the situation, the cause, the time when these symptoms are manifested, the acute pain at the injured part when we touch it, the inflammatory tumefaction which was evident before the cerebral functions had suffered."

It is certainly wise to endeavour to make these distinctions, though their practical value may not be very great, because the cerebral symptoms existing, we are bound to act with that energy which cerebral disease requires.

Contusions of the head often produce at the part a tumor, caused to some extent by an effusion of blood under the scalp. Its consistency depends very much on the quantity of blood which has been poured out at the part. With moderate care and practice it is hardly possible to fail in distinguishing these tumors; but every surgeon has had opportunities of seeing them mistaken for depression of the cranium, and, therefore, we may assume, that this is an error into which, in an early part of their career, most men have fallen. Certainly, after the candid confessions and cautions of Ruysch, Petit, and Pott, the error, in the present day, is more inexcusable. The reason of the mistake is this: these tumors present an extremely depressible centre, and a raised and resistant circumference. If, too, an artery passes directly under or beside them, the pulsation has been mistaken for that of the brain. But if we compress, with sufficient force, the centre of one of these tumors, we find it resting on an equal bony surface. If, with the tumor, there were an unequal base, with hard angular and sometimes moveable points, then we should be justified in pronouncing for fracture with depression; but as to pulsation of the brain, it cannot be perceived without exposing comparatively a considerable point of its surface.

These tumors of themselves are comparatively unimportant. In many cases they are left to themselves; but in most instances it is prudent to subject them to treatment, because in those situations absorption is difficult, and the mass of fibrine remaining there may become the nucleus for a troublesome degeneration. It was formerly the custom to compress them, but this is often painful: they are sometimes leeches; sometimes cut down upon, and evacuated; but, considering the occasional consequences of wounds of the scalp, the latter plan should not be employed until other means have failed, and the necessity for acting has become decided. When the tumor is large, and the quantity of blood effused very considerable, absorption can scarcely be hoped for; and, preceded by the contusion, it may irritate subjacent tissues, and as the brain is very near it may suffer.

A contusion, in appearance, may be so trifling as to produce neither concussion nor external tumefaction, and yet may be pregnant with the greatest mischief. A man receives on the head a blow

with a small stick; after an hour he ceases to regard it; at the end of eight, ten, or fourteen days, you are requested to see that man; you find him suffering from headache, rigors, nausea: you perhaps hear nothing of the blow unless you ask the question. You examine the head; you find a tender puffy point where the blow was received: this is the seat of mischief. The explanation is simple; the blow destroyed a blood vessel, and caused an extravasation of blood between the pericranium and the bone, which induced inflammatory action, ending in a purulent secretion; or it excited inflammation of the pericranium or the bone itself; in either case the result being the same, the separation of the pericranium from the bone, and the death of a certain extent of bone: that condition produces a corresponding separation of the dura mater from the internal surface of the cranium; the dura mater and other membranes may be irritated and inflamed by the presence of the pus, and the inflammation may be communicated to the brain itself. The course of treatment necessary in such a case is to cut down upon the puffy point for the purpose of evacuating any fluid which may be collected there, and if possible to dissipate the irritation at the part.

In violent contusion of the cranium, the vessels which connect the dura mater with the cranium may give way; blood may be effused between them, or inflammation and suppuration may follow, and the bone may be mortified in its entire thickness. In some cases the patient does not for some time experience any severe symptoms; a slight pain only is complained of. Many days after, the pain may extend to the whole head; physically and morally the patient is prostrated: there are nausea, vomiting, sleeplessness; the pulse is hard and frequent: some days after these symptoms are manifested, if the inflammation be not arrested, a tumor without much pain is manifested at the contused point; when it is opened we find that the periosteum is detached, and dark in colour; that ichorous pus is formed under it; that the bone itself is altered, at least in colour. Gradually the fever increases; the patient is agitated, and the pulse more frequent; soon, rigors, cold sweat, convulsions, or delirium, follow; the patient becomes comatose, and death is not far off. If there be an external wound, the nature of the pus changes, as those symptoms are developed; it becomes sanious; the edges of the wound are tumid, and the pericranium is detached. Examination after death shews the dura mater no longer adherent to the bone, and much changed by the action of the ichorous fluid collected between it and

the cranium; sometimes also we find a collection of pus between the dura and pia mater.

An energetic antiphlogistic treatment, venesection, leeching, and cold, may in some cases prevent the fatal effects of contusion of the cranium. When they fail, and the periosteum is detached, a circumscribed tumor formed, and symptoms of inflammation and compression are manifested, the use of the trepan is indicated, and should not be delayed.

A contusion may destroy continuity, producing what is termed a *contused wound*. In these cases we must attempt to procure union by first intention, as in an incised wound, but the chances of our accomplishing it are more remote, because the edges are often contused, so as to be unable to enter into adhesion; still the resources of nature are great, and, however great the injury, we can set no limit to her power of reparation. At some points adhesion will take place, at others it will not. These wounds are not unfrequently followed by suppuration; pus may be pent up, and we must lose no time in setting it free. With respect to all general principles of treating wounds, we have already set them forth at sufficient length when we treated of wounds generally. I then stated that sutures, as a means of bringing the lips of wounds of the scalp into apposition, were to be used with caution, because they not unfrequently irritate, and that much might be done with long straps.

A contused, incised, or lacerated wound may be accompanied by injury of the cranium itself; it may be, that it leaves only a slight trace—the *hedra* of older writers; it may implicate the entire thickness. In the greater number of cases the kind of injury is easily made out, because the soft parts have been entirely destroyed, and we can apply the finger or a probe directly upon the point, but the extent of mischief, how far the bone is contused, how deeply perforated, are not easily made out. These injuries are often complicated with fracture and depression, or concussion. It is astonishing, however, how much loss of substance may be sustained without fracture or concussion. In Larrey's Clinical Surgery of Armies this is very strikingly exemplified, especially in the Egyptian campaign, where the Mamelukes were encountered. Using the sword as they did as the principal offensive weapon, it was not to be wondered at, that sabre wounds of the head were very frequent; but it is astonishing how frequently the injury was limited to the external wound. The sword in those cases, says Petit, cuts the cranium as a knife cuts an apple, without concussion, and the cases often do well. In many cases, even when a slice of the cranium,

and even of the dura mater, or the brain itself, has been carried off, they have done well. There is a curious case in point, in Dupuytren (*Traité des Blessures, &c.*), of a citizen, who, in July 1830, believing himself to be followed by at least fifty concitoyens, wished to drive back a squadron; the soldiers sliced the scalp in all directions; one laid bare the dura mater: he walked to a neighbouring house, was dressed, and did well.

In all these cases a clear indication is, if the osseous injury be not very great, to heal the soft parts if possible by first intention; if it be, there is difference of opinion on this point. Some persons even then recommend immediate union, but the greater number are of opinion that it is wiser to leave a vent for the pus that may be formed, and to secure union from the bottom of the wound. When a piece of bone is fairly detached, but still adhering to the soft parts, some persons endeavour to save it, by reapplying it immediately, as Paré advised; others think it best to remove it, as advised by Beranger and Fallopius. Although I do not pretend to say that a slice of bone may not reunite, I do maintain, that nine times out of ten it will not; and if it do not, it will be a source of irritation; therefore as a rule I hold that the safest course is to extract it at once, and there would be then a better chance of immediate union of the soft parts.

When the wound is a puncture from a bayonet, a sword, or other similar weapon, a very severe blow is necessary to penetrate through the whole thickness of the cranial bones, and in such a case the chances of concussion or fracture are very great: except in particular points of the cranium, usually the instrument does not pass beyond the outer table. If the instrument break, and a portion of it remain in the wound, no prudent means of removing it should be neglected, because it will be an infallible source of dangerous irritation. A man in a quarrel was struck on the top of the head with a knife, the point broke off and remained in the wound; the surgeon who dressed the wound did not sufficiently examine it; the edges were brought together, and the wound healed. Many years passed without accident, except from time to time pain was felt in the cicatrix. After some years he applied for admission at the Hôtel-Dieu, and was received. In examining the cicatrix, Dupuytren felt that it was raised by some foreign body; he cut down upon it, discovered the point of the knife, and with the crown of a trepan removed it. The symptoms were not dissipated, and there was paralysis of the side of the body opposite to the wound. The dura mater was

incised; nothing escaped; the brain was carefully punctured, and out gushed a quantity of pus: all the bad symptoms, fever, coma, delirium, disappeared, and the man did well.

In these injuries the internal table often suffers to a much greater extent than the external, and this is often a cause of the unfortunate result of so many cases. I lately saw a man who presented on the external table a fair incision without any depression, whilst a portion of the internal table, more than two inches long and half an inch wide, was driven into the brain. In these cases, if no part of the instrument remain in the wound, and there be no symptom of compression, the proper course is, to endeavour to heal the wound by first intention. But as we often cannot ascertain the depth of the wound nor the extent of injury, it is necessary for many days to watch the patient very carefully, and to act with proper energy upon the occurrence of any cerebral symptoms.

Contusing bodies may contuse or fracture the bones of the cranium, but the soft parts must have proportionally suffered, and the contents of the cranium may not have escaped unharmed. It is not easy to ascertain how far the bones have been contused, but that very uncertainty shews how necessary it is to be on our guard against ulterior mischief, which may be very insidiously developed, and sometimes after considerable intervals. The frequency with which serious mischief has followed contusions of the cranium, raised the question of the prudence of using the trepan before any symptoms were developed. Unquestionably Desault was right in stating that when a contusing body has destroyed the pericranium, so as to uncover the bone, the chance of after accident is very imminent; but I doubt whether the best opinions of the present day would go so far as to say that in this case the trepan is as necessary as in fracture, or that, if we do not trepan, the dura mater will inflame, and mortal suppuration follow. I have already stated that a contusion may cause the separation of pericranium, even when there is destruction of the soft parts, and this state may require the use of the trepan; but where the soft parts are destroyed, and the cranium exposed, the mischief is often less serious, because, if pus forms, it is not pent up. I do not think, with Desault, that, in all such cases, the occurrence of untoward symptoms must be anticipated, by the application of the trepan. I believe most men would agree with him in opinion, that where a contusion has been very severe, it is prudent to incise the integuments, for the purpose of ascertaining the condition of the cranium, and that if the pericranium be detached, and the colour of the

bone be changed, the question of the trepan then very fairly arises.

The greater number of surgeons of the present day deny, whilst the majority of the older surgeons affirm, that depression of the external table of the skull may occur without fracture. That some of the cases of so-called depression were bloody tumors, with depressible centres, consequent upon contusion, that others may have been congenital, I can readily believe; but I have had evidence, other than that furnished by infants, to satisfy my mind that depression without fracture, as a consequence of contusion, is possible: at the same time I am free to admit, that Plattner's case may be taken as a fair representative of the class. A man fell from a window, was insensible, and remained for some time in a state of stupor; the head being shaved, a deep depression was observed, without injury to the corresponding integument: the patient recovering sensibility, and fearing some operation, cried out that the depression was not a consequence of his fall, but had existed from birth; he got well without any bad symptom. For this condition to be possible, the blow must have been inflicted over the frontal sinuses, or some point where there is a great thickness of diploë, otherwise the very brittle internal table must be fractured by any considerable depression of the external table.

REMARKS ON THE PATHOLOGY AND TREATMENT OF CROUP.

To the Editor of the Medical Gazette.

SIR,

THE object of my former communication was to shew the benefits accruing from a combination of opiates with antimonial emetics very early in croup. My convictions are strong as to the utility of the practice. I am, of course, fully aware of the benefit which every one knows to be derived from an antimonial emetic alone; but from the good effects produced by the anodyne, I am persuaded the combination will greatly enhance the success. I purpose, with your permission, laying before the profession a few notes of cases of croup, illustrating this point, and subjoining one or two others as gleanings in the pathological anatomy of the disease under consideration.

CASE I.—T. H., æt. 18 months, stout and healthy, was seized with very unequivocal symptoms of croup on 16th of Feb., 1837; tonsils red and swollen,

but no effusion or membrane on them; attack preceded by catarrhal symptoms of considerable severity. He was ill ten hours before I saw him; he had immediately a quarter of a grain of tart. emetic, a tea-spoonful of syrup of poppy, and a dessert-spoonful of water; this was repeated twice, at intervals of fifteen minutes, before profuse vomiting took place. During this period a leech was put upon each foot: these being active, dropped off in twenty-five minutes, and the child put into a hot bath, in which situation he vomited most freely, became pale, drowsy, and exhausted, after being fifteen minutes in the bath: he was previously fretful, and coughing and crying in a most distressing degree; all of which subsided, and he fell into a calm deep sleep. A dose of calomel in a little jelly was given before putting him to rest; he had a long quiet deep sleep, with little coughing and no crying; the calomel purged him. His voice though hoarse was free from croupy sound or nearly so. Two grains of calomel and three of Dover's powder were given every six hours, and appeared to mitigate his cough, as also did holding his head over a deep vessel, a jug, containing hot water. His gums were scarified; and the counter-irritation of equal parts of lin. ammon. and ol. terebinth. applied on a bit of surgeon's lint to the proper part of thorax seemed to accomplish a cure. He completely recovered, and continued stout, thriving, and healthy, till the 17th of April next year (1838), when he forms the subject of

CASE II.—T. H. was now two years and a half old; though healthy, has ever since the former attack of croup had a croupy sounding cough when vexed; and on taking cold he always seemed to his parents to be threatened with croup, which they combated by their own skill.

Ten days ago he took measles with considerable cough, which three days ago became croupy. Common antimonial emetics, baths, leeches to feet, purgatives, and a blister, during these three days were tried, but in vain; he is now decidedly affected with well marked croup; breathing quick and oppressed; pulse 140; skin hot; thirst; tongue white.

To abbreviate details, I would state that every effort was made to save the child by emetics with and without anodynes; bleeding, baths, and blistering; sulphate of copper was freely administered; mer-

curial inunction and mercurials by the mouth were steadily persevered in till the gums were decidedly affected.

On the 19th, the following is the notice of the physical signs of the thorax:—Inspiration more difficult and shorter than expiration; dulness on percussion on some points, but not universal; natural at upper and anterior parts; respiratory sound extinct on lower and posterior parts of left lung, though percussion is natural there.

22d.—A whitish coating over all inside of throat and fauces, and on tongue, which is spotted-like; barking sound of cough and rapid breathing; percussion of chest natural; vesicular respiratory sound gone on right side; bronchial breathing still heard.

26th.—Besides other remarks, crepitant rale to a considerable extent on right side, but percussion nearly natural over all chest; is sinking; several mouthfuls of a fluid like prune juice in colour, forcibly coughed up when I was present, devoid of all smell.

27th.—Convulsive fits and death.

He had no delirium throughout; senses acute till night of 26th. Never any blood or films coughed up or expectorated; there was a dirty white stuff on the tongue and fauces, about consistence of paste, but granular looking, day before death. He was not apparently distressed in his breathing at the last, nor were the lips livid to the degree of those dying of croup; he mostly swallowed instead of spitting out what came up from his air passages.

Section cadaveris.—11 A.M. 29th April: little change in expression of countenance, which was placid; a considerable quantity of fat under the skin every where, though not much in the internal organs; muscles of a colour approaching to slight purple; a considerable quantity of fluid blood in large veins—the jugular, the subclavian, and the thoracic branches thereof. The lungs filled the chest, were of a mottled light purple and buff colour at upper parts; the summit of upper lobe on right side had many bullæ of emphysema in it; there were many fine firm membranes, of a filamentous appearance when stretched, obviously of long standing, binding the lung to the pleura costalis, particularly the upper lobe; the lower lobe being glued to the pleura costalis by lymph, yellow, soft, and very easily broken, doubtless quite recent. The parts of the pleura costalis not ad-

hering had many points of redness and vascularity, and there were six or seven drachms of serous fluid in it; the lower and posterior part of the right lung's surface was mottled, or spotted deep red; felt firm and liver-like, heavy, and its sharp margin covered by a recent layer of lymph; the upper lobe was distinctly emphysematous, and there were several irregular small pouches or vesicles of air, the walls of which consisted of the pleura pulmonalis, the air cells having given way. The parenchyma of this portion was of a lake red, mingled with a reddish buff; crepitated when cut into, and swam buoyantly in water; the lower lobe was consolidated at many points of considerable size; sank in water, and was infiltrated with yellow diffuent puriform matter, easily torn and broken down; its section presented a somewhat mottled greyish appearance; it did not pit on pressure. The air tubes or bronchia still potent and obvious in the midst of it. *The left cavity of thorax*: pretty extensive adhesions of the pleura pulmonalis to the pleura costalis, by friable yellow lymph and a little serous fluid: an ounce and a half in cavity. The summit of left lung was crepitant, swam in water, and was tolerably free from disease, but the lower lobe was infiltrated with puriform matter, consolidated, and sank in water heavily; lost the crepitation on handling or cutting, and its substance was of a dark venous-red appearance. In both lungs there were portions in very various stages of phlogosis.

The coating observed previous to death on the tongue and fauces had disappeared, nor was any visible on the gullet, epiglottis, and the margins of the glottis. The epiglottis was thicker than natural, and the margins of glottis were red as red currant jelly, swollen to the thickness of half a common lead pencil all round the margin of the chink, forming, as it were, a collar or rounded edge, instead of the sharp margin of these parts in their natural state. The surface of this swollen margin was abraded at some small points, and on its surface were several small vesicles or blisters. It felt soft and fleshy; no fluid flowed on cutting into it. The lining membrane of the larynx was of a red currant-jelly-like colour, several vessels seen on it, and some dirty mucus with specks of the lining membrane intermixed, several patches of which, very thin and very pale, and not larger

than herring scales, were still firmly adherent to the mucous lining of the air-tubes. The redness and the small patches extended down the trachea and bronchi. None of the prune-juice looking stuff, which he coughed up before death, could be seen in the air-passages.

The heart was healthy; right cavities contained primrose yellow clots, about the full of an ounce measure, and much purple serum flowed away on cutting off the apex of the heart; they had long tails extending into the venæ cavæ and into the pulmonary artery, which, when drawn out, might by fancy be likened to worms. There was a little of the same coagula in the left side, but not one-third so much as in the right.

Serous membrane of *abdomen* quite natural throughout; liver paler than usual. Gall bladder very full, and of a dark green colour.

Mucous lining of alimentary canal had every evidence of a phlogosed condition in many parts. The stomach had much dark greenish fluid in it; spleen and pancreas sound; kidney, ureters, and bladder, healthy. We were not permitted to open the head.

CASE III.—R. B., æt. 2 years, a healthy child, but had a smart attack of diarrhœa for some days, which has left him weakened and languid. About eleven P.M. of 3rd of August he was observed suddenly to cough and breathe with a croupy sound, which the whole family knew too well from his sister's late fatal attack. *He has had no cough or other catarrhal symptoms*, and the first sound of a croupy kind was heard on his waking out of sleep and suddenly coughing and breathing with the brazen clanging sound.

I saw him at half-past eleven, P.M. when he had no other symptom than the barking croupy cough, and when peevish back-draughts of a hoarse croupy character. Every function in a healthy state; no fever; cheerful and lively and played in good spirits when in the hot bath, into which he was instantly put. He had a dessert spoonful of a strong solution of tartar emetic, and eight drops of the sol. mur. morph. in it. The emetic solution was repeated in fifteen minutes with four drops of the anodyne. He was kept forty minutes in the hot bath, and vomited freely several times. The croupy sound abated; he soon fell into a calm slumber.

Eleven A. M. of 4th August. — He had a very quiet night, and had only one or two croupy coughs. Had two doses of Dover's powder, $2\frac{1}{2}$ grains each. One or two patches of dirty lymph on posterior fauces, and a large one on left tonsil, which is red and swollen. A dose of castor oil has purged freely. No constitutional symptoms.

1 P. M. — Croupy symptoms have returned as well marked as ever; and at 1 P. M. after a consultation with Dr. James Watson, he had an emetic dose of the antimonial solution every hour: in the first dose I gave him six drops of the solution of mur. morph. Two grains of calomel every two hours were also given. He was kept in bed, and a counterirritant embrocation (ol. tereb. et lin. ammon.) applied to chest.

Vespere. — He has vomited freely; all patches off the throat; has slept a great deal all day, and free from cough and croupy symptoms. Dr. Watson, whose kind and efficient attentions he now had (for I was at St. Andrew's), continued the calomel; and on Wednesday evening I found him free from complaint, though very weak.

REMARKS. — This case may be viewed by some as differing from the type of real croup; it might be said that it came on in too sudden a manner, and wanted the precursory symptoms of catarrh or bronchitis, which usher in certainly a vast proportion of cases of cynanche trachealis. I should have thought so too, unless I had evidence from experience of the accession of real croup being as sudden and unexpected as in the case just related.

CASE IV. — A girl, 4 years of age, full and healthy, was somewhat exposed to a cold east wind; she was put to bed at 8 P. M., in high health and spirits, and was observed to be free from complaint as late as 11 P. M. that evening. About 3 A. M. of following morning she awoke suddenly, with sense of suffocation, intense pain in ear, croupy breathing, and other evident marks of great distress. I saw her about 4 A. M. of 4th March, with every symptom of croupy breathing and cough; much ear-ache; tonsils reddish and slightly swollen, but presented no other morbid appearance. She had an emetic of sulphate of copper, and the same medicine continued in smaller doses; leeches applied to throat, and warm bath; calomel was given in the forenoon, and repeated during the

day; with the calomel in the evening a dose of Dover's powder was given. Considerable relief ensued; the medicines were continued, and a blister was applied to top of sternum. On the 5th I was called out of town, and requested the parents, in case she was no better, to ask the advice of one of my professional friends. On the 7th I found her, after the steady use of the sulph. cupri, the calomel and Dover's powder, considerably freer from croup; cough and breathing less strepitous. On the 8th symptoms were aggravated, and a thick layer of dirty white lymph on whole of tonsils, uvula, and pillars of fauces, and extending down as far as the eye could reach; breathing croupy, loud, and laborious. A fearful attack of suffocation came on, followed by convulsions and coma, in which state she continued till evening of same day, and died. Leave could not be obtained to open the body.

I could adduce other cases in which croup of an inflammatory nature came on with equal suddenness, so that I cannot admit its sudden advent to be a sufficient mark that the case is not cynanche trachealis, or of an inflammatory character, but one of a spasmodic nature. Nor can I avoid relating the following case, to shew that *in some cases of inflammatory croup febrile symptoms are very late in making their appearance*, and that their absence should not throw us off our guard, so as to lead us to mistake the disease because there are no febrile symptoms present, an error into which the description of some authors might lead the unwary.

CASE V. — W. R. —, a boy six years of age, full habit, though labouring under whooping cough for twelve weeks, and sent here from Aberdeen for change of air.

30th October, 1834. — Three days ago his cough put on the croupy sound, and his breathing became *wheezy*, particularly at night; but he continued playful and took his food, though rather restless and disturbed by cough last night. This morning he took his porridge at breakfast, and came, to all appearance, free from complaint, into the room to have my advice. This is my note of the case: — "Distinct croupy breathing and croupy cough; appetite good; pulse natural; bowels moved by castor oil; tongue slightly white; skin cold and moist."

Notwithstanding the entire absence of constitutional or febrile symptoms, the decided character of the croupy sound induced me to point out to the friends of the boy my alarm and his risk, and to ask a consultation. Dr. Jas. Watson saw this patient along with me; our chief reliance was placed on antimony and mercurials; leeches and a blister were also had recourse to.

On 31st (the fifth day of disease), there is the following note: "A good night after free vomiting; but at 7 A.M. began to breathe with more difficulty, and I now (11 A.M.) find it very much more oppressed and more wheezing; pulse 90, soft; skin natural. No visible affection in fauces; he points to larynx, and says it is painful; sounds of respiration and on percussion quite natural."

Vespere.—After six leeches to the throat, which bled well, I find his breathing more loud, 26 times in a minute; inspiration and expiration equal in length; he is restless, but occasionally sleeps a little; considerable visible movement or heaving of chest; sound of chest on percussion quite natural; respiratory sound extinct in some parts, but wherever heard it is natural. Now and then there is a fit of coughing, which is like a bark, and very brazen and clanging, and has a back draught.

Nov. 1st.—Blister rose in five and a half hours; a very restless night, during which breathing difficult, and he "vomited" or coughed up a film, which, on inspection, had the consistence of lymph, one broad piece of a quarter of an inch broad, nearly one inch in length, and having several tails or branches attached to it, obviously from the air tubes, though they were not entire or tubular themselves. About 9 A.M. to-day his feet became cold, his breathing slower and slower, countenance livid and cadaverous, and he sunk without a convulsion or struggle at half-past 10 A.M. He was quite acute and sensible till within two hours of his death. He felt relieved after vomiting the film.

On inspecting the trachea we found it inflamed, and in part covered with a layer of lymph of various breadths, and its continuity broken at two or more points; there was no lymph in left bronchus or in larger branches near it, probably the site from whence the film coughed up had been separated. The film or layer of lymph penetrated, as far as we could

trace it, into the tubes in the parenchyma. There was a considerable quantity of fluid (serum) in the substance of the lung, but no inflammation in it, or in pleura; some portions of the lung emphysematous.

I cannot doubt, after having seen such cases as these recited above, that croup or tracheitis may come on to all appearance in a most sudden and unexpected manner, and, until a very advanced period of its progress, may be unattended with febrile symptoms. I would most respectfully suggest, that the following sentence from the writings of an eminent author should have been qualified, lest (as I fear it will) so unguarded a statement lead into error. "From spasm of the glottis, or purely spasmodic croup and hysterical affections simulating it, inflammatory croup may be distinguished by the presence of febrile symptoms, the less sudden and more permanent character of its attack, and other points of its history." Against a statement so likely to mislead the unwary I beg to raise my testimony. With your permission I shall transmit one case more of this fatal disease, with a few remarks.—I am, sir,

Your obedient servant,

ALEX. J. HANNAY, M.D.

Andersonian University,
17th July, 1840.

ON THE "REFLEX FUNCTION."

To the Editor of the Medical Gazette.

SIR,

In the July number of the British and Foreign Medical Review, I have just read a notice of Dr. F. Nasse's observations on Dr. Marshall Hall's doctrine of the non-participation of sensation in the (so-called) reflex motions. Dr. Nasse's arguments against the doctrine appear to me to be very much the same with those which I offered to the public, in a series of papers on the subject, in the second volume of your journal for 1838-9, page 74, and with some previously published by Dr. Volkmann, none of which have as yet been satisfactorily answered. The question is not whether reflex motions from mere impression, and without any intervention of sensation, occur at all, for it has been long known that they do, as in the contraction after death of the iris on the

admission of the light, or of the lids when the eyelashes are touched. But are we, on the strength of such few reflex movements following impressions, where the connection between the incident and reflex nerves is direct, to deny the influence of sensation in the thousand complex movements in which it intervenes, and which no known anatomical connection can account for—to leave the relation of sensation to such movements a wonder and a mystery; and finally, to supplant its agency by a new theory of the dependence of combined movements on a reflex power, to which, however specious, objections exist as startling and apparently insuperable as ever interfered with the reception of any new doctrine.

The theory of combined muscular actions excited by impressions on the extremities of nerves without the intervention of sensation, necessarily supposes definite and direct connections between the excitator and the reflex nerves in all cases. Yet Professor Alison has shewn fully, that no anatomical discovery, no conjectural connection of nerves in their course or at their roots, can account for the muscular actions which arise in obedience to certain irritations applied and sensations experienced; these actions accompanying or succeeding one another in great variety, not according to the nerves or parts irritated, but according to the sensations excited. Why does not Dr. M. Hall's theory offer some explanation on this head? Why is it that irritation of the fifth pair in the nose excites sneezing, while irritation of the same nerve in the cheek excites full inspiration only; and other violent irritations of the same nerve, and same branches of it, excite no respiratory action whatever. Why the nerves of the abdominal muscles act simultaneously in the actions of vomiting and straining, but alternately in the action of coughing, sneezing, laughing, weeping, &c.; or why the nerves of the diaphragm act alone in the case of full inspiration, whether from irritation of the fifth pair in the face, or of the par vagum in the lungs; or why the nerves of the abdominal muscles associate themselves and act simultaneously with those of the muscles of the face in the actions of sneezing, laughing, weeping; but not in those of full expiration, or coughing, or tenesmus, in which they themselves act with equal force; or why the laryngeal branch of the par vagum, which

moves the arytenoid muscles, acts in concert with the nerves of the abdominal muscles, and closes the glottis in the actions of vomiting and tenesmus, but escapes such combinations in the actions of laughing, coughing, or sneezing?

It is not deniable that many facts and arguments of a specious nature, favour Dr. Marshall Hall's theory of the reflex function; but this was always the case with Sir Charles Bell's system of respiratory nerves, which, supported as it was by his many beautiful illustrations of the connection between incident and reflex nerves, yet failed in establishing itself permanently or generally with physiologists. One objection to a theory, however harmonious or imposing the general facts or arguments supporting it, if that objection be inexplicable, forms as great a bar to its reception as if there were a thousand; and it is fruitless adding proof upon proof in corroboration of its truth, while few or no efforts are made to set aside the difficulties which it includes. Sir Isaac Newton laid aside his wonderful theory of gravitation for many years, supported as it was by innumerable facts, when one simple statement respecting the dimensions of the earth, which was at variance with it, but which afterwards proved to be incorrect, was offered in some paper read at the Royal Society.

With regard to the now disputed proposition, that certain combined muscular movements, or muscular expressions, or cries, are evidences of animal suffering, as mankind has admitted them to be for ages, and as the brute creation has instinctively acknowledged, it is hard to say what satisfactory evidence can now be offered in support of it.

When we refer to those complex movements observed in respiration, coughing, laughing, &c., as instances of beautiful and harmonious combinations of muscular action by a single sensation, the influence of the sensation is denied, the movements being, it is said, reflex, and the result of purely physical impressions on the nerves. When the still more extraordinary movements observed in decapitated animals, either evincing the ordinary actions expressive of pain, or adapted to resistance or escape, are pointed to, it is said adaptation of motions to an end means nothing, the whole organized fabric being made up of a number of such adaptations. When it is shown

that the motions often continue after the impulsive force is removed, and the impressions of all physical stimuli have died away, it is inferred to be merely a consequence of new parts of the surface coming in contact with the table on which the animal moved, and so occasioning, momentarily, new impressions, and therefore new reflex movements. One only description of action—spontaneous action—resulting from internal sensations, not from external impression, is admitted by Dr. Marshall Hall, as characteristic of the sentient system in contra-distinction to the excito-motor. He says, unhesitatingly, "these latter are never spontaneous; they are always excited;" yet when proofs are brought forward of actions indisputably spontaneous taking place after decapitation, or after dividing an animal into segments, their consideration is almost wholly passed by, as if even spontaneity of action is also to be explained by the reflex system.

Not to embarrass the subject now with the many objections put forward by Volkmann and Nasse, I shall simply ask those who are advocates of Dr. Marshall Hall's excito-motor system, to repeat my experiments on the earthworm, taken recently from the earth, and, if it be possible, explain how the extraordinary spontaneous movements in the hinder segments, already described in my papers, could occur without the agency of sensation. In those papers it will be seen that by spontaneous, I do not mean voluntary, movements, but movements arising out of internal continuous feelings, and wholly independent of impressions produced by external stimuli, which, of necessity, cease when the stimuli are withdrawn, and cannot recur unless they are reapplied.

I remain, sir,

Your very obedient servant,

WILLIAM GRIFFIN, M.D.

Limerick, 74, George Street,
July 23, 1840.

NOTE,

BY DR. POWER, ON MR. H. CARMICHAEL'S
INVESTIGATIONS REGARDING
THE PLACENTA.

[*For the Medical Gazette.*]

THE position which the after-birth occupies in the womb in the different

stages of gestation, has lately been undergoing a very interesting, and we may say satisfactory, inquiry, at the Coombe Lying-in Hospital, Dublin, by Mr. Hugh Carmichael.

The extensive opportunities which that institution in every respect affords, renders it peculiarly favourable for the investigation of a subject of so abstruse and difficult a nature; and it is but justice to Mr. Carmichael to say, that in his hands this appears to have been fully accomplished, and a point of science, heretofore veiled in mystery, developed and explained in a way that is both intelligible and satisfactory.

We regret our space precludes the possibility of our giving other than a very slight sketch of this explanation, and the mode adopted in his inquiry. We must for this purpose refer to Mr. Hugh Carmichael's paper on the subject, which appeared in the "Dublin Journal of Medical Science" for January, 1839, and the perusal of which will amply repay the reader.

The opinion respecting the situation of the after-birth in the womb has heretofore, as is well known, been, that, with some few exceptions, inasmuch as its first formation takes place in the vicinity of the fundus, at the uterine extremities of the fallopian tubes, in that position it continued throughout gestation. Mr. H. Carmichael has shown, as well by reasoning on the matter as by demonstrative proof, that this opinion is erroneous, and that, although its position may at its formation be as above stated, yet, by the time labour is about to come on, it has so changed that position that it is then low down on the posterior wall of the womb, generally either to the right or left side, according as the fallopian tube lies through which the ovum entered the uterus.

The first of these points, which relates to its original formation at the fundus, Mr. C. does not think it necessary to dwell on; it is admitted generally. To the position of it when labour is near, and the changes in this respect it appears to be undergoing during gestation, his attention has been chiefly directed, and as it appears to us with complete success.

The mode adopted for this purpose consists in an examination of the secundines after their delivery, the membranes of which, he shows, bear such marks as will enable us to ascertain where each

part of them lay when within the womb, and thus assign to the placenta, which is always attached to them, its uterine position likewise.

Mr. H. Carmichael remarks, in his interesting essay, that it has been observed by several writers on midwifery, that the distance the placenta lies from the fundus or from the mouth of the womb may be ascertained by simply observing the secundines after their delivery. The child, it is known, is enveloped in the membranes within the uterus, in a shut bag, similar in formation to the peritoneum, or any other of the serous class; and in order to its birth, the head, or whatever part presents, must first perforate this bag where it corresponds to the mouth of the womb. The membranes, with the placenta attached, are afterwards delivered uninjured or broken elsewhere, and the distance the placenta is from the perforation at once demonstrates where its distance from the mouth of the womb was when within the latter.

Mr. Carmichael, however, has gone further in his examination of these parts than his predecessors. All former inquirers merely sought to learn from them the altitude of the placenta in the womb, and even this we may say none made the subject of conclusive inquiry, as is evident from the opinion of the present time being, that the fundus is its usual position at all stages of gestation. Our author, however, has shown that by inspecting them in the manner pointed out by him—first, that the placenta is, in ninety-six times out of the hundred, in the vicinity of the aperture made in them by the head previous to its birth; and next, that the longest part of the membranes give evidence of having lined the most distended or concave part of the womb; the shortest, one comparatively of a straight superficies.

The inference he obviously deduces from these facts are two-fold. The one, that the fundus is not the situation of the placenta at the close of utero-gestation, but that it is somewhere near the os uteri; and the other, that that somewhere is on the posterior surface.

Mr. Carmichael then goes into a very ingenious disquisition as to how the womb enlarges as the child grows. He contends that this cannot be in the way generally supposed; the fundus rising

up and maintaining its position unaltered all through, because in that case, he says, the placenta, which is first formed on that part of the womb, would continue there, and the inspection of the secundines, as above, would discover it implanted on them exactly opposite their aperture or opening. He then declares his opinion on this point to be, that to account for this apparent sinking of the placenta on the posterior part of the womb, the anterior wall of the organ must chiefly supply the increasing superficies, while the back part of the womb, and what was the fundus on the formation of the placenta, only increases in a proportion sufficient to accommodate the placenta. If the fact be that the placenta is found at the close of utero-gestation low in the womb, as Mr. C. states, this appears a very rational conclusion, because its first formation being at the uterine opening of the fallopian tubes, it would be difficult otherwise to account for the change of position; and some explanation of how this takes place may be derived from the mechanical effect produced on the front of the womb by the weight of the increasing child, pressing against that part of the organ, and thereby loosening out its texture, and which could not occur in the same way in any other part of it.

Mr. Carmichael then submits, that if this be the mode the womb enlarges, the contractions must take place in a corresponding retrograde direction; so that if uterine expansion goes on, on the anterior wall chiefly, its diminution or expulsive efforts at labour must be there likewise; and on this supposition he explains several matters connected with the process of gestation and parturition, which, it must be admitted, were heretofore very unsatisfactorily accounted for. We cannot, however, enter into any detail of these matters, but shall only say the subject is highly deserving of attention, and hope he will follow up the investigation, and fully avail himself of the extensive field for observation which is happily placed at his disposal.

The opinions put forward by Mr. Hugh Carmichael have, in subsequent numbers of the Dublin Journal, been impugned, and their stability questioned. Mr. C., however, complains of the manner in which this examination was conducted, and shows how some

of his statements were not fairly represented. We cannot suppose this would arise from other than misconception. The view Mr. Carmichael has taken of the subject, and the manner he has handled it, are highly interesting, and we would say, as far as appearances go, convincing. In the last number of the above journal he has in part answered a reply to his paper from the Dublin Lying-in Hospital, and the remainder is to appear in the next succeeding number;—he ought in that to apply himself to the consideration of a statistical table of 100 cases, which the reply in question contains, and which certainly, as it stands, makes very much against him;—he has, however, stated his intention to do such, and we shall anxiously await its appearance.

THE LARGE PROPORTION
OF
INDIGENT OR IMPROVIDENT
FAMILIES

IN THE POPULATION OF THE TOWNSHIP OF
MANCHESTER, SHEWN FROM THE REGIS-
TERS OF THE LYING-IN HOSPITAL.

BY JOHN ROBERTON, ESQ.

Late Senior Surgeon in Ordinary to that
Institution.

[For the London Medical Gazette.]

MANY attempts have been made at different times to exhibit the physical and moral condition of the people of this township, by pursuing various lines of statistical inquiry; as, concerning the state of education, the condition of the dwellings, the amount of poor's rate, the number of persons receiving relief, the quantities of certain kinds of food consumed, and the like. My present object is, by a somewhat different line, to exhibit the population as unfortunate in consisting too exclusively of the working classes—of persons low in the social scale, both in respect to the means of living, and, what is of far more consequence, in respect to forethought.

In the year 1796, the Manchester Lying-in Hospital was opened for the reception and delivery of poor pregnant married women; also, as a charity for the delivery of the same class at their own homes. Relief in these two ways was afforded up to the year 1814, when the admission of in-patients ceased, and

thenceforward the establishment was a Lying-in Charity alone. Its operations extended to the poor of the whole town of Manchester, excepting Pendleton, including the townships of Salford, Manchester, Hulme, Chorlton-upon-Medlock, and Ardwick. In 1815 (the year after the reception of in-patients ceased), the number of women delivered at their own homes was 1433. In the year 1825 the number had more than doubled, being 3120. From that period the increase was so great, that in the years 1830, 1831, and 1832, the number delivered averaged 4428 per annum.

In extracting certain particulars from the registers of the Charity, I purposely confine myself to the three years above mentioned, because the census of the population, taken in 1831, affords an accurate enumeration, for those years, of the inhabitants of Manchester, whose poor married women had the benefit of the Charity; in the next place, because the population of the townships has probably undergone little increase, and certainly no material improvement as to condition, since that period; and chiefly, in the last place, because the Committee of the Charity, alarmed at the increasing tide of applicants, began, late in 1832, or the year following, to reject all patients in a first pregnancy; and gradually, by various new regulations, to lessen and limit the number of admissions.

By the census of 1831, Manchester (by which I mean the afore-mentioned five townships) contained a population of 218,529. Now, in the year ending May 1830 as many as 4397 patients were delivered by the Charity; in 1831, 4444; and in 1832, 4445; being, as I have said, 4428 deliveries on the average per annum.

Such was the number of births attended by the Charity. What proportion did it bear to the entire number of births in the whole population? The number of births which occurred in the whole population cannot be accurately ascertained, owing to the want then, and indeed the same may be said at the present moment, of a perfect system of registration; for even now the returns of births cannot be considered as complete. But a near approach to correctness may be got by reference to the proportion of births to the population in

certain foreign towns, where registers are probably to be relied on; and it is guided by such instances that I infer that the legitimate births in Manchester are as one, annually, to every thirty inhabitants*. Assuming this as the probable proportion, the number of births for the whole population would be 7244, consequently the proportion attended by the Charity must have amounted to more than three-fifths of the whole: or, to express the same in different words, out of a population of 218,529 persons no fewer than 132,840 had yearly all the legitimate births that occurred among them, attended by the Lying-in Charity.

In reflecting on these startling results a question naturally suggests itself, did recently married women—those, I mean, in a first or a second pregnancy, find admission? The following table supplies an answer:—

	Total of Women delivered.	Of which there were in a first Pregnancy		In a second Pregnancy
1830 ...	4397 ...	375	610	
1831 ...	4411 ...	310	609	
1832 ...	4445 ...	141	529	

Thus it appears the average annual number of patients delivered by the Charity being 4428, there were included in this number, 276 married women (upwards of 6 per cent.) pregnant for the first time, and 580 (upwards of thirteen per cent.) pregnant for the second time, making together nearly one-fifth of the total number delivered.

The trade or occupation of the patients' husbands: concerning this particular I have made what I could out of the register, for one year, extracting the names of the trades of all set down: the number of names extracted is 2089, but under this head the register is very incomplete.

Apprentice, 1.	Cleaner, 1.	Journeyman, 2.	Skinner, 3.
Batter, 7.	Cooper, 2.	Joiner, 12.	Scavenger, 4.
Book-keeper, 1.	Clothes seller, 2.	Labourer, 437.	Shoe-binder, 1.
Bookbinder, 1.	Card-grinder, 3.	Lamplighter, 1.	Soldier, 15.
Box-maker, 1.	Cutler, 3.	Lodge-keeper, 1.	Stainer, 1.
Brazier, 2.	Currier, 1.	Moulder, 5.	Sailor, 1.
Blacksmith, 9.	Comb maker, 1.	Millwright, 1.	Stone mason, 7.
Basket-maker, 4.	Chandler, 1.	Mechanic, 3.	Sawyer, 10.
Butcher, 2.	Dyer, 91.	Maker-up, 3.	Sizer, 4.
Boatman, 12.	Draper, 1.	Miller, 3.	Stripper, 15.
Brush-maker, 4.	Dresser, 2.	Nailer, 1.	Setter, 1.
Brewer, 3.	Doubler, 1.	Needle-maker, 1.	Servant, 2.
Baker, 6.	Ender, 1.	Overlooker, 1.	Stone-breaker, 3.
Bat-maker, 1.	Engineer, 1.	Ostler, 2.	Schoolmaster, 2.
Brick-maker, 6.	Engraver, 1.	Porter, 53.	Saddler, 4.
Band-box-maker, 1.	Foundry-man, 1.	Packer, 5.	Sweep, 5.
Blacking maker, 2.	Frame-maker, 4.	Plasterer, 5.	Slubber, 4.
Bricklayer, 15.	Fustian-shearer and cutter, 71.	Pinheader, 1.	Striker, 5.
Binder, 2.	File-cutter, 3.	Piecer, 23.	Silk-winder, 8.
Barber, 1.	Fringe-maker, 1.	Pereher, 1.	Spinner, 103.
Boatbuilder, 1.	Factory-worker, 20.	Painter, 29.	Spindle-maker, 2.
Boiler-maker, 1.	Grinder, 6.	Pipe-maker, 1.	Tailor, 45.
Cotton-picker, 7.	Gasman, 2.	Pot-seller, 1.	Tenter, 1.
Clockmaker, 2.	Groom, 9.	Printer, 16.	Throster, 1.
Collier, 2.	Grocer, 2.	Plumber, 4.	Turner, 4.
Carter, 32.	Glassblower, 3.	Reeler, 13.	Umbrella-maker, 1.
Carder, 28.	Gardener, 2.	Rope-maker, 8.	Weaver, 518.
Chemist, 2.	Gilder, 1.	Reed-maker, 2.	Wire cutter, 1.
Chestmaker, 5.	Hawker, 8.	Smith, 4.	Winder, 47.
Carpenter, 28.	Hatter, 2.	Sinker-maker, 1.	Warehousemen, 4.
Calenderers, 11.	Hat dyer, 11.	Silk weaver, 4.	Wood-turner, 1.
Corkeutter, 1.	Huckster, 2.	Slater, 4.	Watchmen, 15.
Clogger, 2.	Hairdresser, 1.	Stretcher, 7.	Warper, 4.
Coachmaker, 3.	Jobber, 23.	Shoemaker, 89.	Wheelwright, 2.
Chair-maker, 5.		Stillener, 1.	Whitesmith, 3.
Coachmen, 5.			

* I have said *legitimate* births, as it is with these only I am concerned, none but married women being admissible as patients of the Cha-

rity. But it was ascertained a number of years ago, in 1827, that the number of illegitimate to the legitimate births in the township of Manchester

From this table, I select the occupations whose number is 20 and upwards, and arrange them in order:—

Weavers, 518.	Tailors, 45.
Labourers, 437.	Carters, 32.
Spinners, 103.	Painters, 29.
Dyers, 91.	Carders, 28.
Shoemakers, 89.	Carpenters, 28.
Fustian shearers and cutters, 71.	Jobbers, 23.
Porters, 53.	Piecers, 23.
Winders, 47.	Factory-workers, 20.

Hitherto it has been the number of women delivered by the Charity, as compared with the entire population included in the before-mentioned townships, to which reference has been made. But it is time to remark that the patients are furnished in very different and unequal proportions by these townships; the township of Manchester supplying nearly six times as many as any one of the others. The following table presents the number of lying-in women attended by the Charity in the different townships in the years 1830-31-32:—

	1830.	1831.	1832.
Manchester...	3417	3710	3681
Salford	683	505	487
Charlton-row	195	126	69
Ardwick	19	29	35
Hulme	47	28	48
Omissions as to residence	36	46	124
	4397	4444	4445

The table which follows shews the population of each of the five townships in 1831, and the annual number of poor married women delivered in each on the average of the years 1830-31-32:—

Township of	Population.	Delivered by charity.
Manchester...	142026	3602
Salford	40786	558
Hulme	9624	41
Charlton upon		
Medlock	20569	130
Ardwick	5524	27
Omissions as to residence and in Cheetham.	27	—

The population of the township of Manchester in 1831 being 142,026, the total number of legitimate births therein must have been (on the principle before

assumed) 4734. But 3602 of this number were attended by the Charity, shewing that a proportion of its inhabitants, amounting to 108,060, must have been so *poor* or so *degraded* as to stoop to receive this kind of charitable assistance. To vary the manner of stating this surprising fact, out of a population of 142026 persons, having annually 4734 legitimate births, only 33,966 persons, with 1132 births, remained independent of the Lying-in Charity's aid.

The township of Manchester embraces the older portion of Manchester; it also contains a great proportion of the mills, machine-shops, and foundries, all the warehouses, and the principal lines of shops. The inhabited portion of the township from Knott Mill to Miles Platting, is, in length about two miles, and from Ducie Bridge to Ancoats Bridge in breadth upwards of one mile. In it very few of the more respectable inhabitants of the borough reside, and these few chiefly in the professions. Nearly all the manufacturers, merchants, and warehousemen, and the more affluent shopkeepers, have, during the last fifteen years, removed to the surrounding townships: even the clergy, and the ministers of the different religious bodies, with few exceptions, are withdrawing to a purer atmosphere: consequently, the resident population consists chiefly of operatives, and of the families of the publicans and smaller shopkeepers by whom they are supplied with the articles of living. Intermingled with the crowd of operative poor, and residing amongst them, there is only a very small number, in some populous parts of the township, perhaps none, who, by education, superior intelligence, and respectable station, are fitted to exhibit an improving example, or to perform those various acts of kindness and benevolence so often and so greatly needed in a dense population. As an illustration of this, I may mention what I have often heard from professional men connected with our medical charities, that they always found that their exertions in attending on the poor in the township of Manchester, howsoever meritorious, remained unnoticed by, because unknown to, the respectable portion of the general community; that it was extremely rare to find any of their patients who were visited and looked after by members of the wealthier families; that however

was probably as one-twelfth; consequently both together will give a proportion of births to the population as 1 to 27. Whether this proportion of births to the population be a little too high, or the reverse, can, of course, in no material way affect the value of any calculations in this paper.

skilfully they might conduct the treatment of a case, howsoever remarkable the cure they performed, it was all one; there was little or no chance of its getting known amongst those families, of an upper class, to which the medical officer of a charity naturally looks for the reward of his gratuitous and self-denying exertions.

That the Lying-in Charity, at the period referred to, was abused and imposed on there can be no doubt. Some few of the patients (contrary to the rules) were unmarried, and others were in too good circumstances to need its aid; but the vast majority were in a state of poverty. Having been many years much engaged in visiting the abodes of the patients, I am obliged to declare that, judging from appearances, and from what I could gather in other ways, their families were very poor, generally destitute of every comfort and convenience, and often even of necessary articles. Few of them, comparatively speaking, rented an entire cottage; a considerable proportion lived in cellars; and those living above ground were, in many instances, lodgers; a single family, however numerous they might be, commonly occupying but one apartment. I have rarely, if ever, observed any of them possessed of a single article of good cottage furniture, as a chest of oak or mahogany drawers, or an eight-day-clock. The furniture was generally of the rudest kind, consisting of one or two clumsy bedsteads, a deal table, two or three deal chairs, and (though this is not always to be observed) a paltry cupboard containing a few articles of common earthenware. At the time of lying-in, the midwife had often, out of her own pocket, to furnish money to procure candles, and meal to make a basin of gruel with. My impression is that it was rare indeed to find any of the patients in circumstances above what would be thought suitable in the applicants to a public charity. Two or three brief inferences drawn from the foregoing tables will conclude what I have to say.

1st. The *fact* of a pregnant married woman applying for the aid of a lying-in charity, is evidence of itself, generally speaking, of either indigence or habits of improvidence.

2nd. The large annual number of applicants on the list of the Manchester Lying-in Charity, in a *first* and *second*

pregnancy, shews with how little forethought the married state must have been entered. In reference to those in a *first* pregnancy, as far as my experience, as one of the surgeons of the Charity, extended, the parties were always found living in lodgings.

3rd. The table displaying the occupations of the patients' husbands, proves that a considerable proportion was of the *skilled* class of workmen.

4th. The circumstances of the population consisting in so unmixed and exclusive a degree of the working classes, is to be regarded as unfavourable to the progress of sound intelligence, morals, and happiness; for since it is unquestionable, that "evil communications corrupt good manners," such a community must *necessarily* be exposed to every kind of corrupting and debasing example and influence; while, from the vastness of the field presented, the means of correction and improvement have hitherto been found to be in a lamentable degree inoperative.

5th. It is often asserted, that because wheaten bread, butcher's meat, and certain articles of luxury, are consumed in much larger quantities, and partaken of by a much greater number of people than was the case half a century ago, the population must be much better fed now than formerly: but in this assertion an important particular is overlooked; for though it be true that the absolute quantity of wheaten bread, butcher's meat, &c., consumed in Britain is immensely greater than it was fifty years ago, the relative quantity may not be equally increased, *i. e.* the quantity in relation to the increased number of inhabitants. The population occupying the soil of the island in the year 1801, was upwards of ten millions; in 1831, there were found nearly six millions more. Hence, it is obvious, there may be great absolute increase of wealth and the means of luxury, and yet the very same or a smaller per centage of the population partaking of them. Indeed, it is easy to conceive that the country may go on, for a time, increasing its wealth, while indigence is the lot of an increasing per centage of its population.

6th. The manufacturing system of this country, grouped as it is in great towns and villages, is an experiment of only fifty years' duration; whose results, as to whether they will be ultimately favourable or detrimental to human hap-

pinness, cannot, as yet, be confidently determined.

7th. It is probable that rapidity and cheapness, in the transit of goods and passengers from one place to another, arising from the construction of railways, will tend to prevent the continued growth of the operative population of Manchester, and other great manufacturing towns, by leading to the erection of manufactories, and the putting out of various kinds of work in the villages near and remote of the surrounding counties.

TWO CASES

OF

ACUTE INFLAMMATION FOLLOWING THE REMOVAL OF FOREIGN BODIES FROM THE ŒSOPHAGUS,

CONTRASTING THEIR AFTER TREATMENT
AND RESULTS.

By GILES BORRETT, M.R.C.S.

[For the Medical Gazette.]

IT has fallen to my lot to witness many cases of choking from food and portions of bone sticking in the œsophagus. I have been often called upon to remove needles, pins, and other sharp bodies from the larynx, which I have succeeded in extracting by means of forceps with shoemakers' wax at their points.

The following cases serve clearly to mark the treatment required after the removal of the foreign body, when inflammation is set up by the mechanical injury done to the soft parts. In the one, inflammation of the œsophagus and adjacent textures brought the life of my patient into imminent danger, and in the other it proved fatal.

On Wednesday, 4th of September, 1839, Mr. Walter Macgrigor ran to our surgery in consequence of a piece of bone sticking in his throat while eating a hasty meal of a mutton chop, about 4 o'clock in the afternoon. My partner, Mr. S. Ferrier, on hearing from him the occurrence, immediately prepared and passed a probang (having an ivory ball at one end), to dislodge and carry the bone down into the stomach, which at the time was thought to have been accomplished. At 8 o'clock the same evening I was called to Mr. Macgrigor, who was complaining of great pain from the bone pricking him, which he

felt persuaded was still lodged in his œsophagus.

I then took a probang with a sponge end, new, soft, and large, and having oiled it, I passed it gently and gradually down the œsophagus, giving it a slight rotatory motion opposite the seat of irritation, hoping the bone would be caught in the loose texture of the sponge, and carried into the stomach; this he seemed convinced had been effected. I advised him to take only barley water and thin gruel.

On Thursday, 5th, he walked out; it was a cold day and he supposed that he caught cold, for on the Friday I met him in the town, when he complained to me of great soreness of his throat. I ordered him a gargle of emuls. amygd. dul., potass. nitrat., et liq. opii sedat.; to swallow a table spoonful frequently.

Saturday, 7th, he was feverish, and I requested him to keep quiet at home, and apply twelve leeches to his throat, and prescribed aperient and antimonial medicines. The next day, Sunday, 8th, I found him more ill; the leeches were repeated, and I begged him to send for me if the pain was not relieved. At 4 o'clock I was called from church to him; I now felt great anxiety at the alarming increase of his symptoms. He was suffering from pain and tenderness of the throat behind the pomum Adami, with frequent spitting, flushed face, eyes suffused, with a full and hard pulse, afraid to swallow, or even make the attempt. I immediately prepared to bleed him, which both he and his friend and companion opposed; I however insisted upon it, assuring them that he was certainly in great danger, and that, in my opinion, bleeding alone would save him. I placed him upright in bed, and bled him from a large orifice until he fainted, in which state he remained some time; indeed the faintness did not pass off for some hours: he took nothing throughout the night. The following morning I had the great satisfaction to find that the pain and other urgent symptoms had been at once arrested by the blood-letting (thirty-six ounces); he could now swallow a little milk and water. From that time his recovery was decided. He was well enough to leave Yarmouth in about ten days, with Sir James and Lady Macgrigor.

After the bleeding of Sunday, 3th, I first learned that our patient was a son

of Sir James Macgrigor. I requested that his friends should be immediately informed of his present alarming state; they arrived here on Tuesday morning early. I directed Sir James's attention to the remarkable appearance of the blood, which I had ordered to be preserved, by which he was enabled to judge of the state he had been in. The coagulation of the first-drawn blood was buffed, cupped, and with a crisped edge; that in the second basin was firm, hard, and slightly buffed.

I shall now contrast the preceding case with that of a young man, aged 25, living near Bury St. Edmund's; the unfortunate occurrence happened at night, June 30th, 1837, and terminated fatally on the 12th of July, as stated by a medical gentleman under whose care he first came. I quote from a letter he was so obliging as to write me on the case, in which I was much interested. "It appears that the young man was spending the evening at a dress-maker's, to whom he was paying his addresses, that he was laughing and talking with the young women, and showing them how he could place a darning needle between his teeth, so as to set his mouth open. While he was doing this, one of the young women came behind him, and either touched him or pulled the chair, when the needle suddenly snapped, and it was supposed that one or both pieces went down his throat: this was about 10 o'clock at night. I was immediately sent for; but on examination of the throat by a most imperfect light, I could not discover the needle or any part of it; it was supposed that the other part flew from his mouth at the moment of the accident, yet it could not be found in the room. The young man still thought that something was in his throat, and requested me to pass something down. I did not much approve of this suggestion, but in the anxiety of the moment I consented; I then oiled a small probang, and passed it cautiously into the œsophagus, and after requesting my patient to state at which part of the throat the foreign body appeared to rest upon, I drew the probang upwards and against that part, in order to withdraw it with the instrument; still nothing came away, although the patient felt immediately relieved, and almost fancied that the needle was removed. The symptoms soon returned, when, at his urgent request, I again passed the probang. As it did not dis-

lodge the needle, I was resolved to do no more till I had the advantage of daylight to explore the throat, which, being in summer, would be about four o'clock in the morning. In the meantime I ordered twelve leeches to the throat, and gave a dose of castor oil; I then left him, telling his friends that I should see him again about four o'clock; but just as I set out from my house at that time, I received a message that it would be unnecessary for me to go, as the family had called in their usual medical attendant. The young man remained under the hands of his medical man nearly the whole of the succeeding day, during which time, I understand, various attempts were made to extract the needle without success."

The sequel of this story is from a letter of a medical friend at Bury, one of the Hospital surgeons; he says—"the man came to the hospital the day after the accident, an emetic having been previously given him. The needle was extracted the day of the admission, with a pair of forceps with cobbler's wax at the end. The man died three weeks afterwards of inflammation, which extended all over the pharynx down the œsophagus. I saw the parts, and they were almost in a state of gangrene." I fear I cannot give you any further particulars, as the surgeon took no notes of the case.

Great Yarmouth, July 28th, 1840.

STRYCHNINE IN NEURALGIA.

To the Editor of the Medical Gazette.

SIR,

IN the administration of active remedies, it has been, I conceive, too much the custom gradually to augment the dose to the utmost limit of tolerance. This mode of procedure is more calculated to exhibit the poisonous than to elicit the medicinal effect of medicines. It is a mode of trying the powers of resistance on the part of the patient, instead of proving the efficacy of the remedy.

The question in every case is, not how large a dose the patient can take with impunity, but, by how small a dose his disease can be cured; for it will not, I think, be denied, that every medicinal agent which is potent for good, is equally potent for evil, when unduly, as well as when untimely administered.

This is a medical canon of universa

application. The paramount duty of the prescribers, therefore, is carefully to note the operation of the remedy upon the disease, and if the disease be yielding to the influence of the remedy, although it may be slowly, instead of augmenting the dose to the utmost limit of safety, to suspend the remedy, from time to time, in order to ascertain what progress has been made towards the cure.

This rule applies to the administration of all energetic medicinal agents—to mercury in the cure of syphilis; to tartarized antimony in pneumonia; to calomel and opium in pleurisy; to acetate of lead and opium in hæmorrhage; to quinine in intermittent fevers; to colchicum in gout and rheumatism; to conium in carcinoma; to digitalis in dropsy; to iodine in bronchocele; to opium in tetanus and other spasmodic diseases; to nitrate of silver in epilepsy; to strychnia in paralysis. In each of these cases, experience has shewn that results far more satisfactory have been obtained from these active agents in medicinal than in poisonous doses. Inattention to this simple rule has doubtless been frequently the cause of their failure.

With these few prefatory remarks, I proceed to the immediate subject of this paper.

The attention of the profession has been for nearly thirty years directed to the *nux vomica*, in the form of its alcoholic extract, as a remedy in paralysis; and for nearly twenty years to its alkaloid, strychnia, for the same purpose. To Dr. J. L. Bardsley we are indebted for several valuable cases, in which the efficacy of strychnia in paralysis was fairly tested.* It is to the utility of strychnia in another class of diseases—the various forms of *neuralgia*—to which I desire to invite attention. Mine was first directed to the employment of strychnia in a case of this description, from conceiving that neuralgia might be occasioned by a diseased condition of the nerves of sensation, similar to that which occasions one form of paralysis in the nerves of motion, viz., an injected state of the capillary vessels of the investing membranes of the nerves. That the loss of voluntary power in the one case, and the acute pain in the other, proceed from one and the same pathological condition—an alteration in the relative

state, or a deviation from the normal relation, which ought to subsist between the capillary vessels and the nervous fibrils.

It is probable this injected state of the capillaries may be owing to the altered qualities of the circulating fluids, which occasion the loss of tone in those minute vessels; and hence their admission of the red particles of blood. The first case in which I tried the strychnia was in that of a maid-servant, who suffered from neuralgia of the infra-orbital branch of the fifth pair. The agony was dreadful. After a variety of means had been employed without any alleviation, strychnia, in the dose of a twelfth of a grain, mixed with sugar, was prescribed. After the third dose relief was obtained. The pain entirely ceased before a grain had been taken. In a few days the pain returned in a slighter degree; the medicine was resumed with the same good effect, and there has been no relapse.

The second case was of another maid-servant. The affected nerve was the infra-orbital branch of the fifth pair, the pain extending to the joint of the lower jaw, the motion of which, in eating, speaking, &c., brought on the paroxysms. After a few doses of the twelfth of a grain of strychnia, the pain ceased, and has not returned.

The third case was of sciatica in a labouring man. One grain of strychnia, divided into twelve doses, sufficed for the cure. The pain returned after several weeks. The cure a second time was effected by the same remedy, and he remains free from pain.

The fourth case was a complication of neuralgia, and loss of power in the right hand and arm, in a female teacher in an infant school. On attempting to write, paroxysms of severe pain, and loss of control over the muscles, compelled her to desist.

After taking the twelfth of a grain of strychnia three times a day, for three days, a great increase of pain in the arm and hand supervened, with violent agitation affecting the whole side. Relinquishing the medicine for a few days, the pain and agitation subsided, and she felt the arm much stronger and less painful. The medicine was resumed again, and relinquished on a recurrence of the same symptoms in a slighter degree. A third course of the medicine effected a cure. The improvement in

* Hospital Facts and Observations.

the state of the general health was no less striking in this case, than in the hand and arm. To use her own expression, "She had never taken any medicine from which she had derived so much benefit as from those pills."

The fifth was a case of sciatica in an elderly woman. The pain had existed for several months, and at times it was excruciating; it commenced with lumbago. Tenderness on pressure being felt in the sacral nerves, a few leeches were applied, and blue pill at night, followed by castor oil in the morning, was prescribed. By these means the tenderness at the lower part of the back was removed, but without any alleviation of the pain along the course of the sciatic nerve. Strychnia, in the twelfth of a grain dose, was given; three grains of the medicine, taken with occasional intervals of a few days, effected the cure, with a very decided amendment in the state of her health.

The sixth case was severe neuralgia of the left arm, accompanied with cerebral symptoms, fits of vertigo, and loss of recollection. The patient had formerly suffered from epileptic attacks, and had obtained immunity from epilepsy by the use of strychnia, in poisonous doses. The dreadful agitation she had experienced under the influence of this medicine rendered her unwilling to have recourse to it again. After a few doses of alterative and aperient medicine, she commenced with the small dose of strychnia. The same symptoms, only in a very moderate degree, followed the use of the remedy—unsteadiness in walking, and irregular twitching in the muscles, with aggravation of pain in the arm. The strychnia being omitted, the pain subsided, and so on several times, each time the pain being less, till it has almost entirely ceased. The removal of the cerebral symptoms preceded the diminution of the pain in the arm, and an amended state of her general health has become apparent under the influence of the strychnia, which she is still taking.

These six cases are insufficient to establish the efficacy of the strychnia in neuralgia; but the result has shown the power of the remedy over painful, no less than over paralytic, affections of the nerves; and it has been so far satisfactory as to entitle the strychnia, in minute doses, to a more extensive trial in this most distressing class of diseases.

As in cases of paralysis strychnia has only been found of use where there was no organic lesion of the cerebro-spinal centres, so, in cases of neuralgia, no hope of benefit from strychnia is to be entertained, where there is any mechanical cause of irritation affecting the nerve at its origin or along its course. The difficulty of ascertaining the existence of such a mechanical cause oftentimes is confessedly very great. The only dietetic restrictions are careful abstinence from any thing sour,—vinegar, hard beer, cyder, acescent wines, unripe and acid fruits, common salt in large quantity, and saline medicines.

The *modus operandi* of strychnia, besides its direct influence upon the nervous system, seems to be similar to that of all bitter tonics; increasing the appetite for food; promoting digestion; and as a consequence occasioning constipation. But this is perhaps not to be regarded as a morbid condition, but as the effect of a more perfect digestion, and the absorption of a larger proportion of nutriment into the system.

It may be owing to the introduction of a larger quantity of perfectly assimilated chyle into the blood, that harmony is restored between the circulating fluids and the nervous system, and hence the benefit of the *diète blanche* in hysterical and other nervous disorders.—I am, sir,

Your obedient servant,

J. PIDDUCK.

Great Russell Street, July 24, 1840.

ACCOUNT OF A PREPARATION
EXHIBITING
AN ADHESION OF ONE OF THE
AORTIC VALVES TO THE
AORTA,

AND AN OCCLUSION OF THE LEFT CORONARY ARTERY.

By P. N. KINGSTON, M.D.

Physician to the St. George's and St. James's Dispensary*.

To the Editor of the Medical Gazette.

SIR,

THOUGH I perceive that a short notice of this preparation has already appeared in your journal, you may, perhaps, deem a more complete history of the case worthy of publication. The follow-

* Read at the Pathological Meeting of the Royal Medico-Chirurgical Society, on April 21st, 1840.

ing is the account which I read to the society, with some corrections suggested by a subsequent dissection of the part.

I have the honour to be, sir,

Your obedient servant,

P. K. KINGSTON.

7, Charles Street, Berkeley Square,
22d July, 1840.

The preparation which I have the honour to lay before the society was obtained by Mr. Charles Walsh and myself at a post-mortem examination on Friday last. It exhibits lesions of which no cases have yet been recorded. There is, in the first place, a perfectly close adhesion of one of the aortic valves, through its whole extent, to the surface of the aorta. It is bound down both by tough bands intervening between the valve and the artery, and also by a membrane, which passes straight over the valve's free edge, and covers the adjacent part of the ventricle and aorta. It is a thin, tough, reddish membrane, with loose shreds appended to its surface. It adheres with firmness, but is easily dissected from the serous tunic below. The valve in question is very slightly thickened at its edges; the other two are rather more so. Where the adhesion has taken place, the aorta is thickened to a quarter of an inch, and of a texture principally fibro-cartilaginous. The rest of its upper part is irregularly thickened from atheromatous, fibro-cartilaginous, and osseous degeneration; the serous tunic is in some places denuded, leaving a rough atheromatous surface, and is in other places torn and undermined. Its orifice and channel are of moderate calibre.

The second lesion to which I referred is an occlusion of the orifice of the left coronary artery, which lies in front of the adherent valve. This is effected by the false membrane above described, which covers and adheres to it. The artery in its passage through the aorta is somewhat thickened and fibro-cartilaginous, flattened and much contracted, with a longitudinal wrinkling of its inner surface. A little beyond, it regains a tolerable size. The right coronary artery is rather small, but healthy.

The heart's cavities were all greatly dilated; those of the left side much the most so. The tricuspid orifice had a circumference of five inches, while its valve was somewhat shortened. The

parietes of the left ventricle were attenuated nearly in proportion to their dilatation; those of the right ventricle were somewhat hypertrophous.

There were extensive bronchitis, pulmonary apoplexy, rather recent adhesion of the left lung to the pericardium, granular liver, softening and deep reddening throughout the mucous membrane of the stomach.

The subject of these lesions, Sarah Guest, was a widow, aged 53, who had rather indulged in spirituous liquors. Her complaint commenced five years ago, as the catamenia became scanty and irregular, were generally worse just before the menstrual discharges, and greatly increased three years afterwards on the entire cessation of the menstrual function. There were cardiac palpitation, pain extending from the heart to the scapulae, dyspnoea, and faintness, which often occurred in sudden and severe paroxysms, either during exercise, when she could hardly save herself from falling, or during sleep, when she was startled up in great terror, and obliged to continue erect for a considerable time. There was also great weight at the stomach after food, frequently combined with crampish pain and vomiting. In all her seizures she took hot stimulating drinks, which excited flatulent eructations, followed by relief.

Six months before her death, her husband having met with an accident which killed him in a fortnight, she suffered extreme anxiety, and, on the last night of his life, she fell into a state of syncope, which continued some hours, and threatened to be fatal. From that time her former complaints increased greatly, and became attended with much cough, excitability, depression of spirits, and debility. Some months afterwards she was my patient for six weeks at the St. George's and St. James's Dispensary, and then a patient of Mr. Walsh, with whom I saw her several times in consultation. There was great tremor of hands; tongue white; pulse, while in bed, about 100, but much faster and sometimes unequal after the exertion of walking; not irregular nor decidedly deficient in firmness or fulness; none of that visible pulsation of the carotids and subclavians supposed to be pathognomonic of aortic regurgitation; a hoarse murmur at the lower cardiac region, owing to the regurgitation at the tri-

cuspid orifice; and a strong blowing murmur at the region of the semilunar valves, owing to the regurgitation through the aortic orifice, one-third of which was permanently patent. To the latter cause may likewise be referred a peculiar vibratory pulsation, which alternated with the heart's impulse between the sternal extremities of the third and fourth left cartilages. The heart's pulsation was seen over a large surface; its impulse was not considerable.

While at the Dispensary, she obtained great relief for six weeks from tonics, antispasmodics, and carminatives; but she then relapsed, and hydropericardium and anasarca supervened. She was confined to bed a month, and sank gradually.

Our diagnosis, as respects the heart, had been, "Defect of the valves of the left side, enlargement of the heart, principally by dilatation, and hydropericardium," which probably was afterwards absorbed.

OPERATION FOR STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

As much attention is just now bestowed on the subject of Dieffenbach's operation for strabismus, I trust you will permit me to offer a remark upon it.

All those who have described the operation mention a sharp hook as a necessary instrument for fixing the eyeball; indeed, some consider that several hooks are required. Besides the objection of wounding the sclerotic tunic, if it can be avoided, the use of the hook is attended with a very considerable degree of pain and alarm to the patient. I believe it to be a perfectly unnecessary instrument, and that the operation may in all cases be performed without it.

I have thus performed the operation three times. One of the patients, a boy in St. James's Workhouse, was but five years of age, and therefore incapable of assisting the operator by any voluntary effort to fix the eyeball.

The following is the mode in which the operations were conducted:—

The sound eye being covered with a bandage, my friend, Mr. Farquhar, of Albemarle Street, raised the upper eyelid with a speculum; I then raised the

conjunctiva slightly with a forceps, and made a vertical incision in it with a pair of scissors, midway between the cornea and the inner canthus; I then passed a probe-pointed hook, furnished with a cutting concave edge, under the internal rectus muscle; but as too much resistance was made by the muscle to the hook-knife, a few of the superficial fibres were divided with the scissors; the former instrument serving as a director until it cut its way out.

I venture to express a confident opinion that the sharp hook will shortly be entirely abandoned in this operation.

I am, sir,

Your obedient servant,

J. G. FRENCH.

St. James's Infirmary,
July 27, 1840.

CHRONIC PERIPNEUMONIA.

To the Editor of the Medical Gazette.

SIR,

SHOULD the following remarks appear to you worthy of public perusal, their early insertion in your valuable journal will oblige, sir,

Your obedient servant,

J. A. HINGESTON.

London, July 3, 1840.

Every surgeon knows a form of inflammation of the eye in which the conjunctiva is as red as a soldier's coat, matted, and dry. The whole of the conjunctiva is of the same character, and even the layer of it which overspreads the transparent cornea becomes dim, and red vessels, or a fasciculus of vessels, may be seen shooting across the cornea. The red colour has, however, a bluish tinge, and the skin of the palpebræ externally is pallid and slightly œdematous. There is no doubt that this is inflammation. But it does not necessarily lead to the usual products of inflammation, at least not to the process of destruction resulting from acute conjunctivitis. The reason of the milder issue of this inflammatory condition would seem to be, 1st, in venous fulness, rather than arterial action; and 2dly, in a general condition of the system in which there is evidently diminished nervous power—the power of the brain being lowered. Under such circumstances, the pathologist well knows that the disorganizing

process is more tardily put into play; that the venous turgescence is a stagnation of the circulating fluid rather than a too rapid transmission of the blood through those small arterial capillaries, which John Hunter designated "the workers;" and that the diminished nervous energy would suspend or delay for a time the procedure of morbid formations. "Slowness of action," says Hunter, "is inimical to integrity of structure;" and here destruction would inevitably ensue, were the issue of the case committed finally to its own operation. Slow, but permanent, disorganization would be the result.

Instances are not wanting in other parts of the body to exemplify the above position: *e. g.* varicocele, in which the functions of the organ are at last impaired, and the testis wasted; and spasmodic asthma, in which the lungs are overcharged with venous blood as well as the rest of the body. In each of these cases the same amount of arterial error would lead inevitably to a speedy disorganization.

In the treatment of the above form of conjunctivitis one may defy the surgeon to cure it by the usual antiphlogistic remedies. Bleeding from the arm, antimonials, salines, mercury to ptyalism, do, as is well known, disappoint those who rely upon the same prompt efficacy as that which is so sure to favour the active treatment of acute conjunctivitis. In the acute form, free venesection, purgatives, calomel, and abstinence, will arrest the progress of the disease at once; but not thus in the chronic or congested form. In this case the digestive organs are debilitated in exact proportion to the debility of the cerebro-spinal system, and the bold treatment will only precipitate the patient into a state of depression, from which he must be first raised before he can be cured or the eye saved. It is the want of brain power which would seem to prevent the vessels of the conjunctiva from returning to the tonic contraction of health; or, is it a diminished power of the ganglionic nerves, the nerves of nutrition and involution, originating in a defective condition or a previous abuse of the gastro-hepatic system? Under either view, the restoration and regulation of nervous power, be that power primarily resident in the cerebral or ganglionic nerves, is the chief point of practice; and then, while this power is

being recovered, the local inflammation may be treated by the appropriate antiphlogistic remedies locally.

I have been thus distinct and minute in tracing out this form of chronic inflammation of the conjunctiva, because every one may see it, and those who have seen it will not for one moment deny its existence. This advantage attends ophthalmic medicine, that we see almost every thing we are called upon to treat, and moreover that we see our treatment.

There is the same form of chronic pneumonia, running the same course, lingering in the same manner, yielding to the same treatment, and probably ending in the same slow process of disorganization. These cases are not generally understood, and are therefore not rightly treated. We never do any thing rightly when we do not understand the matter subject to our senses.

A patient presents himself, weak, coughing, hoarse, and unfit for his usual occupation. The countenance is that of illness—dejected, with a sunken eye, sharpened features, a pale lip, and a faint flush on the cheek. The features are dark; the skin is dry and hot; the pulse small, sharp, and quick; the tongue white, dry, and rough; the breath fetid; the appetite deficient; and the bowels wrong. The nights are restless, occupied in coughing, dreaming, and shifting about in bed, and interrupted first by fever, and then by perspiration towards the dawn. The number of respirations is increased; the breathing is hurried on going up stairs; and there is a stitch in the side on taking a deep inspiration.

Upon a superficial view this is a case of consumption. A formidable opinion is pronounced, and the patient is sentenced and delivered over to await his end in the country or among his friends. But upon a minute consideration of the symptoms we shall arrive at a different judgment.

The features of a consumptive patient are not dark, except towards the very close; for, in general, the countenance is painted with a deceptive hue of health. The expression is not dejected; for, in general, a bitter smile rests upon the lips of a victim doomed to consumption. The tongue is not white, dry, and rough, except towards the close, when aphthæ appear; for the consumptive tongue is generally clean and moist. Neither is the derange-

ment of the gastro-hepatic system so marked when a tuberculous excavation actually exists; for a consumptive patient will often eat well even to the close. There is, therefore, a discrepancy in the outward symptoms.

But then, on examining the cavity of the thorax. First of all, there is a healthy hollow sound on percussion of each clavicle; and, on listening to the chest, there is, over the whole of one lung, complete evidence of its being pervious to the air, with only some sibilous sound denoting bronchitis, and some mucous wheezing. But, on examining the opposite lung, though the same characters present themselves, yet we at last arrive at a point of dull respiration—no respiration, ægophony, and dull percussion. Here lies the seat of the malady; here are peripneumonia and pleuritis; and, though the patient may have been ill and declining for weeks and months, yet here is the seat of illness, and here the mischief weighing down the rest of the body. On questioning the patient, he will answer that the stitch is on *this* side—that he cannot lie on *this* side—that he often has pain *here* on breathing deeply, or on going upstairs.

Furthermore, on retracing the history of the case, evidence will be gathered of the health having been out of order previous to the cough coming on, and of there having been some accidental exposure to cold, which seemed to bring on the cough during a state of progressive debility. Other signs may by chance confirm us in the right view of the case, *v. c.* the complexion not being consumptive; the relatives not being so; the previous health not having been interrupted by occasional coughs; the whole illness dating from a particular epoch: but no evidence can supersede that of auscultation and percussion.

There is no doubt that active peripneumonia could not continue long without hepatization, the disorganizing process being commenced; and, indeed, acute peripneumonia is too startling and too loud an illness to be easily overlooked by any one. But here is the evidence of peripneumonia *de facto* existing for some length of time: it is therefore not acute peripneumonia. What state of inflammation is it then which exists thus long? Does the chronic inflammation of the conjunctiva yield a solution of the problem? *viz.* venous fulness rather than arterial action, and marked debility

of the nervous power, with gastro-hepatic derangement? To my mind, this is the true solution of the problem. These cases, misunderstood, wrongly treated, and left to themselves, must, there can be no doubt, slowly proceed to disorganization and, eventually, to death. The issue confirms the evil diagnosis given under a mistaken view of the malady. The very event arrives according to the very ignorance which predicted and insured it. It is thus that our errors often appear to ourselves the confirmations of our wisdom. If it be true, what Burke said is the attribute of a great statesman, "That he ought greatly to fear himself," it is especially true of the upright physician.

Now these cases of chronic pleuro-peripneumonia are not curable by the usual round of antiphlogistic remedies. The bold depleting measures would quickly destroy the powers of life, already enfeebled. Our object is to reduce the local inflammation, and to sustain the strength. A moderate venesection from the arm, mild aperients, antimonials, the milder oxides of mercury, local loss of blood, vesication, and moderate ptyalism, slowly, carefully, and resolutely persisted in, with a milk and farinaceous diet, will be certain of effecting a cure. Days or weeks may be required; but it will be gratifying to hear the healthy sounds of the lung return, and very interesting to remark how the gradual departure of the morbid sounds establishes the correctness of the view taken previous to putting in practice the treatment. The return of the healthy sounds in the lung will be consentaneous with the mercurial action on the gums; and as soon as the gums are sore, and the pneumonia has yielded, a copious pituitous and mucopurulent excretion will arise, causing an incessant cough, and entirely preventing sleep. In this stage of the illness opium will be beneficial; infusion of bark with a mineral acid instead of mercurials, and an improved diet. Sulphate of zinc may be required to check the phlegm arising from the chronic bronchitis; and, lastly, what is often prescribed erroneously at the first, meat diet and fresh air.

Time will be requisite to accomplish this cure. But a patient who has been at the first looked upon by every one as labouring under a fatal disease (and a fatal disease it would be), will, if the

case be strictly investigated, rightly understood, and carefully treated, recover as good health as ever he had in his life. The principle of treatment lies in detecting the inflammation, and in applying moderately and resolutely antiphlogistic remedies (mercury and blood-letting), according to the vigour of the body. It is like a riddle; when once made out the case is a very simple one.

I am not certain that others will regard this subject with the same interest as myself. It would appear that many cases of imputed consumption are nothing else than chronic peripneumonia; and it may be well to discriminate carefully between two things wonderfully similar, but by no means identical. At one glance we may see the result of erroneous notions and practice. Mercury and the loss of blood would destroy a consumptive patient; but they are the only means of safety in a case of chronic inflammation of the lung.

My own mind was awakened chiefly to this malady by watching cases of chronic conjunctivitis, and transferring the slowness of their cure, and also the completeness of their cure, to cases which I had been certain were some form of inflamed lungs—not catarrh, but peripneumony.

We must not forget, in the treatment of inflammation, that the veins perform as important a part as the arteries. Chronic inflammation is especially characterised by venous congestion. There is a good and an evil in the venous circulation predominating over the arterial—namely, that the case is lingering, on the one hand, but less disorganizing on the other. Also, in these cases, tonics are borne throughout the course of their duration without increasing inflammation, which is not the case in acute inflammations, where tonics only add fuel to fire. Physiology easily explains this seeming paradox; for the total powers of life sink under the circulation of carbonized blood: *v. c.* asphyxia. It is probable that many cases of paralysis, usually called asthenic, and curable by tonics and a generous diet, are the result of venous *not* arterial fulness; and that the different forms of hepatic derangement, which yield to bark and iron, have their origin in the same pathological condition of the liver. Ague, low fever, debility from grief, anxiety, and study, are each

of them marked by venous torpidity of the brain, in the whole or in some of their stages, and equally sink under or are injured by the use of the lancet, but improved by a sustaining treatment.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

On the Nature and Structural Characteristics of Cancer, and of those Morbid Growths which may be confounded with it. By JOHN MUELLER, M.D., &c. Translated, with Notes, by CHARLES WEST, M.D., &c. Part I. 8vo. pp. 182.

THIS work contains a part of the results of the observations which Professor Müller has continued to make since 1836, when he published some remarks on tumors, in a paper read before the Berlin Academy of Sciences, of which an abstract was given in our number for June 24, 1837. Since that time the author has not only been steadily pursuing the subject in Berlin, by the examination of numerous specimens, both recent and prepared, of morbid growths, but has also inspected the museums of this country and of several of the universities of Germany, and has collected at them such observations that he believes he can now present a classification of tumors, founded on constant differences in their structure and composition, which may be recognized with certainty. The reputation of Müller is a sufficient guarantee that his work is well done; but we shall probably afford the best evidence of this by giving a brief abstract of its most important parts, which we shall do, as far as possible, in the words of the excellent translation.

Its first pages are occupied with some general observations on the minute structure of morbid growths. After pointing out the confirmation which their examination affords of the truth of what we must presume our readers to be acquainted with, namely, Schleiden's and Schwann's remarkable discoveries of the development of all tissues from nucleated cells, the laws of which are found to be strictly observed in the formation of all tumors, the author proceeds “to a more minute examination of the chemical composition

and microscopic structure of morbid growths."

Their chemical composition, as far as it can be at present ascertained, differs comparatively little from that of the ordinary constituents of the body. The proximate animal principles existing in morbid growths, are either some kind of fat, or gelatine, or albumen; other materials are present in only small quantities in them. They may, therefore, be usefully, though not very definitely, divided into three classes, according as one or other of these principles exists alone, or is very predominant.

Fatty tumors always consist of an animal organized basis of cells or cysts secreting fat, and of the fat itself. There are several varieties of them, which may be determined by examination of the physical and chemical characters of the fat; the chief among them are the lipoma or common adipose tumor, and cholesteatoma or laminated fatty tumor. In those growths of which fat is not the chief constituent, it generally exists only in the form of oil-globules, or of granules, or as minute crystals.

The second class are almost entirely reducible to gelatine, by boiling them from 10 to 20 hours, or more. Among them are arranged the cellulo-fibrous tumor, enchondroma or cartilaginous tumor, and the osteoid tumor; all of which have characters by which, when once known, they may be easily recognized.

Albuminous structures either yield no gelatine after many hours' boiling, or only so small a quantity as may proceed from the cellular or other tissue accidentally mixed with or present in them. Their external appearance is so striking that, when once seen, they are easily identified. They never have a compact tendinous texture; sometimes they are tender and gelatiniform, at others fibrous, at others cellular, glandular, or fibrous; generally they are friable and easily torn; they include collagenoma, scrofulous tumors, albuminous sarcoma, albuminous osteo-sarcoma, and *all varieties of real carcinoma*.

The microscopic elements of morbid growths are (in addition to capillary vessels), fibres, granules, cells both with and without nuclei, caudate or spindle-shaped bodies, and vessels. Blood-vessels exist in almost all; with the exception of cholesteatoma, fine injections (though by no means well suited to dis-

play the minute texture of morbid growths), exhibit blood-vessels in the substance of every one. These vessels, however, with the exception of those in aneurism by anastomosis, have no remarkable arrangement. [A fact which may be of some interest to those who were engaged in the warm controversy on varicose capillaries, with which our pages were not long since occupied.]

Fibres form a grand constituent both of albuminous and of gelatinous growths. The cellulo-fibrous and tendino-fibrous tumors, among the former, are almost entirely composed of fibres, more or less resembling those of cellular tissue; and among the latter, in the albumino-fibrous tumor and the carcinoma fasciculatum, very transparent fibres form the most striking characteristic.

Granules, *i. e.*, spheroidal or elliptical bodies, which do not present any internal cavity when viewed under the microscope, exist in vast numbers in some albuminous tumors, being either contained in the germinal cells, or arranged about the fibres.

But the cell is by far the most frequent element of morbid growths. Cells alone sometimes form nearly the whole tissue, as in cholesteatoma, cancer alveolare, cellular sarcoma and osteo-sarcoma, which are composed of cells cohering by their walls, while fibres of cellular tissue serve only to form the connecting membranes of their lobuli. In other cases the cells do not adhere, but are deposited close together in great numbers in the meshes of a fibrous texture, as in several forms of carcinoma, in which they form the real *seminium morbi*. In some cases the cells have nuclei either in the substance of their walls or within their cavities; in the former case the nucleus is that from which each cell has been developed; in the latter the nuclei are the germs of new cellules. In other cases, however, as in cholesteatoma, the cells have no nuclei. Some cellular structures yield gelatine, as the enchondromatous tumour, which is the pathological parallel of normal cartilage; others are albuminous, as the cellular sarcoma, which is the parallel of the chorda dorsalis and of the decidua. Some cells do not contain young cellules, as those in laminated cholesteatoma; in other cases the cells are encased one within the other, as in many of the cells in carcinoma alveolare, and in enchondroma, and

some of the formative globules in carcinoma simplex and articulare. The average size of the cells is 0.00054 of an English inch; but they are often not larger than 0.00015 to 0.00021.

Caudate bodies are another frequent element of morbid growths; they are elliptical pouches or cells, terminating at one or both extremities in a fine caudiform fibril of uncertain length; they sometimes contain granules, and occasionally a nucleus, with one or more nuclei. This structure is exactly the same as that which Schwann observed in primitive cellular tissue, and in other tissues which undergo the transformation from cellular to fibrous structure. Most fibres in the animal body are formed by the elongation of cells; but in the morbid structures which consist of caudate corpuscles, it would appear as though the development of the fibres were arrested in the half-cellular state in which they exist in the embryo. The fibrils proceeding from one or both ends of the corpuscles have generally a diameter equal to one-fourth or one-fifth of that of the body; sometimes they are bifurcated, and sometimes a third fibril springs from the side of the corpuscle.

The caudate bodies are elements of several carcinomatous growths, as well as of perfectly innocent albuminous tumors; but the author has never met with them in those that are chiefly gelatinous, though it is probable (since they are merely fibres in an early stage of development) that they may exist in them at certain periods.

Differences in the structure of the microscopic forms of morbid growths depend on the way in which their development proceeds. The process is an exact repetition of the changes which are observed in the development of the several normal tissues. In enchondroma, or cartilaginous tumor, a development of new cellules upon nuclei formed in the cavity of the old cells, and again of still younger cells within the former, is observed in all respects similar to the endogenous development of cells in healthy cartilage. In like manner, in albumino-cellular sarcoma, and in the osteo- and gelatiniform sarcoma, many of the parent cells are sure to contain young cellules with parietal nuclei; and in carcinoma alveolare the same mode of development is yet more evidently seen. The large cells which, in this form of cancer, are visible to the

naked eye, contain in their cavities a second generation, and so forth, till we arrive at the smallest cells of all, in which are nuclei of a darkish yellow tint, generally somewhat elongated, and presenting a minutely granular structure, which either lie free in the cavity of the cell, or have in some parts already evolved a germinal cell around them. Corresponding differences are also observed in the mode of development of the caudate bodies, in the different forms of morbid growths.

From all these preceding observations, it is evident that the division of morbid growths which has hitherto been made, into homologous and heterologous productions, is incorrect; for the most innocent growths do not differ in their minute elements, nor in their origin, from carcinoma. Still the author is convinced that pathognomonic marks of carcinomatous growths, which it is of such great importance to practical medicine to find out, may be ascertained; for they possess certain peculiar anatomical characters, which are distinguishable either with the naked eye, or by the aid of a common magnifying glass. It is to this portion of his subject, namely, his investigations into the minute structure of carcinomatous growths, that he next proceeds.

He terms those growths cancerous which destroy the natural structure of all tissues, which are constitutional from their very commencement, or become so in the natural process of their development, and which, when once they have infected the constitution, if extirpated, invariably return, and conduct the parties who are affected by them to inevitable destruction. The several forms of these growths, though in their extremes widely different from each other, are shewn to have an intimate relation, not only by all possessing the above characters in common, but by the gradations by which they pass into one another being often imperceptible, and by the circumstance that, after extirpation, one form may take the place of another.

The most invariable character of cancer is the loss of the proper tissue of the part affected by it; its elementary forms are developed between, and displace the natural tissues of the part, giving rise to, but not being themselves dependent upon, their degeneration. The tissues in the neighbourhood usually become

soon connected with the growth; hence carcinoma is less moveable than other tumors, and hence the retraction of the nipple when the cancer of the mammary gland is seated close beneath it. Other signs of considerable importance are the enlargement of adjacent glands, and the coincident existence of other similar growths.

Taking these as the general characters of cancerous tumors, the author divides them into six varieties, viz. Carcinoma simplex or schirrus, *C. reticulare*, *C. alveolare*, *C. melanodes*, *C. medullare*, and *C. fasciculatum*.

1. *Carcinoma simplex* is the variety which is described in the works of most of the earlier writers, and which is usually spoken of as the common cancer of the breast and other parts. The diseased masses of this kind are generally (according to the description which the author has drawn up from the examination of a great number of recently extirpated carcinomatous breasts) irregular in form, not lobulated, hard, and resisting the knife, and presenting when divided a greyish appearance, which has but very little similarity to cartilage. Whitish bands are not invariably present. Here and there they occasionally shew whitish filaments, some of which are hollow, and contain a colourless, whitish, or yellowish matter, and which probably result from the thickening of the walls of the lactiferous tubes and lymphatics. The mass is composed of two substances, the one fibrous, the other grey and granular. The former is best seen on scraping away the grey matter, for which it serves as a sort of basis, from the surface of a section. It is then shewn to be composed of a very irregular net-work of firm bundles of fibres. The grey matter consists of microscopic formative globules placed among the fibres, and but slightly adherent to each other; they are transparent hollow cellules, from 0.00048 to 0.00130 of an English inch in diameter, insoluble in acetic acid and in water at any temperature, and containing either only a few granules, or one larger body, which looks like a nucleus, or like a smaller cell. In addition to these, oil-globules are also always seen in considerable numbers diffused through scirrhous growths.

2. *Carcinoma reticulare* is found in many parts of the body, and is even more common in the female breast

than *C. simplex*, from which, on a section, it is distinguished by the white reticulated figures intersecting the grey mass, which are perfectly evident to the naked eye. It is oftener of large size than *C. simplex* is, and has a tendency to a lobulated form. It is sometimes nearly as hard as the preceding, but is at others softer, more nearly resembling medullary cancer, and among a large number of specimens its consistence is found to be very variable. Its mass is composed of globules imbedded in a reticulated fibrous tissue; the former are formative globules or cells, similar to those of *C. simplex*. The white, or yellowish white, reticulated figures, which are always more or less distinct in this form, are peculiar to it; they are irregularly reticulated; sometimes they present a branched arrangement; at other times they appear in spots. They are peculiar formations, not dilated vessels with thickened parietes, but produced by the deposition of grains of white matter, composed of opaque agglomerated granules, in the grey mass. These white bodies accumulate as the disease advances, and by the time that the mass begins to be disorganized they form a great part of its texture. They often lie in large masses imbedded in the surrounding tissue, or invest with a cream-like lining the interior of cavities which have formed in the diseased growth.

3. *C. alveolare*. — This is the form commonly described under the name of gelatiniform or areolar cancer, and which is found by far most frequently in the stomach. In the part of the stomach affected with this disease there is usually great thickening; the basis of the structure is composed of interlacing white fibres and laminae, whose interspaces are occupied by cells, varying in size from a grain of sand to that of a very large pea, some closed, others communicating, and all containing a very viscous, clear, perfectly transparent jelly. In the early stages the cells can be seen only with the microscope; in the later the disease, which commences in the muscular coat, makes its way both to the mucous and the peritoneal surfaces. The smaller cells, when examined with the microscope, are found to contain encased within them many still smaller, which, in their turn, include others. Many cells contain only nuclei, which lie free within their cavity. The

walls of the largest cells are distinctly fibrous, and the fibres run from one cell to another.

The history of the development of this form of carcinoma corresponds exactly to that of the primitive formation of cartilage, and of the *chorda dorsalis*. The young cells are produced from nuclei developed within the parent cell, and in time filling its cavity; then coming in contact they form one compound cell, whose exterior at length may burst and discharge its contents. The fibres forming the walls of the largest cells constitute a nidus, within which younger generations of cells are developed. The main distinction between this and the two preceding forms of cancer seems to be, that in this the cells continue to grow, and their walls become adherent to each other, while in the preceding such a progressive development and mutual adhesion do not take place.

4. *C. melanodes*.—Melanosis is merely a variety of cancerous degeneration. Microscopic examination detects two forms of it. In both the basis is formed of a fibrous net-work, in the meshes of which the melanoid matter is deposited. The latter is formed of separate cells of various forms, or of caudate bodies filled with yellowish or blackish granules. They are real pigment-cells, and the globules of pigment are seen both within and around them; the latter are probably such as have escaped from cells, and these frequently present a rapid molecular motion, like the pigment-globules of the pigmentum nigrum of the eye.

5. *C. medullare, fungus hæmatodes, &c.*—The component parts of this growth are a medullary mass, composed of globules or other corpuscles, and a tissue made up of delicate fibres, in the meshes of which they are placed. Its colour is properly white, or greyish white; and the various other hues that it presents depend on the blood-vessels which it contains, and which are usually very numerous, and on the blood which is often effused into its substance. The author describes three varieties of this form, distinguished by being formed either, first, for the most part of roundish formative globules; or, second, of an exceedingly soft cerebriform base, composed of pale elliptical bodies without caudate appendages; or, third, of a mass containing caudate or spindle-

shaped corpuscles, which are often so arranged as to give it a fibrous appearance.

6. *C. fasciculatum seu hyalinum* is a variety which is commonly included in the preceding, with which, however, it corresponds only in softness. It is chiefly composed of fibres which, in some cases, have a tufted arrangement, running in a divergent course from a common centre, so that the mass may be rent into radiating bundles, but which in others are irregularly interlaced, and form lobules with membranous septa. Such growths are extremely vascular, and their vessels follow the arrangement of the fibres; occasionally they are transparent, like jelly, whence the name first given of *hyalinum*. The fibres of which they are composed are extremely pale and transparent; their surface is beset here and there with granules; they have the same diameter as those of cellular tissue, but are in no other respect similar to them.

[To be continued.]

The Maternal Management of Children in Health and Disease. By THOMAS BULL, M.D. London, 1840.

It is observed by Robert Hall, in his Discourse on War, as a peculiar aggravation of that calamity, that, according to the remark of the most ancient of poets, "In peace, children bury their parents; in war, parents bury their children." Would that it were so, and that it was only when the fierce passions of man were let loose, and the sword unsheathed to inflict violent death, that this unnatural state of things occurred. But if war destroy its thousands, ignorance hews down its tens of thousands; and the registration lists disclose the melancholy fact, that in the midst of the profoundest peace we are suffering one of the direst calamities of war—that of parents burying their children!

The report from the town of Liverpool alone shows that this is no exaggerated statement, since, in the year 1838, "48·34 per cent. of the entire deaths, or nearly one-half, occurred under five years of age." That this fearful mortality need not happen is proved by the striking contrast exhibited in the Lying-in Hospital of Dublin, where, during the four years ending in 1784, out of 7650 children, there died in a badly-ventilated house 2494 children;

while in a similar period, under more favourable circumstances, there died, of a like number of children, only 279. A similar diminution of the rate of mortality was witnessed in Manchester, under the wise regulations of Drs. Percival and Ferriar. It becomes a most important object to make known to the community at large the principles on which this amelioration depends; and this is done in Dr. Combe's work, and that now under notice. This last, however, occupies a place peculiarly its own, and dwells less on the means by which disease is prevented, though this is clearly but succinctly done, than on the signs by which each malady to which infancy or youth is commonly subject may be recognised at its first onset, with directions how to act *in giving effect to the directions of the medical attendant*, whom it supposes to be immediately sent for. It may be looked upon either as a sequel to the author's previous work, "*Hints to Mothers*," or as an independent treatise. It is composed with the same attention to method which characterised the former, and is written in the same simple and intelligible style. Of such a work it is impossible to give an abstract or analysis, but it is one which it will be as beneficial for the practitioner to find in the hands of a parent whose children he attends, as for the children whose mother studies and applies its precepts. By the enlightened parent he will be aided and usefully seconded; by the ignorant and prejudiced he will be thwarted and disappointed. The best thanks of the profession, as well as of all intelligent mothers, or those who are in the place of mothers, are due to Dr. Bull for his very excellent little book.

Advice to Mothers on the Management of their Offspring. BY PYE HENRY CHAVASSE, M.R.C.S. London and Birmingham, 1839. Small 8vo. pp. xvij. and 148.

THIS little work is written in question and answer—a method which stands in the way of any continuous flow of thought or reasoning, but which will be grateful to those readers who like to have knowledge presented to them in the most practical shape, and would rather obey precepts than discuss principles. The fault of this book is excess

of caution. Thus a child is to eat no vegetable but potatoes, "except it be occasionally a few asparagus heads." (p. 77.)

From the place in which it occurs, this restriction appears to be intended for very young children; but why should they not eat carrots, turnips, cauliflower, &c. &c.? At page 123, in answer to the question "what is the best dinner for a youth?" we find, among other things, that greens and trash should not be given. Now, no one will defend trash; but why should we prohibit greens?

Our author approves of dancing, but does not approve of balls, and makes a distinction which is reasonable enough, between an evening dance and a midnight ball; but he goes an extravagant length on the subject. "A delicate female leaves the heated ball-room, decked out in her airy finery, to breathe the damp and cold air of night. She goes to bed: for the first few hours she is "too much excited to sleep," &c.; and he asks, "Can it then be wondered at, if the laws of nature and of common sense be so set at defiance, that one-fourth, and that fourth comprising the most interesting part of the community, that one-fourth of the deaths that occur in Great Britain arise from consumption; that more than fifty thousand die annually of this disease alone?" (p. 120-1).

But surely, the majority of the fifty thousand must be persons who have very little to do with heated ball rooms, airy finery, gallopades, or ices! Of course, we do not deny that fashionable hours and exposed scapulæ may be among the causes of disease; but we protest against their being put down as prime agents of national mortality.

Nor do we agree with our author in setting down the "hurly-burly and excitement of fashionable life" among the causes of chlorosis. However, he is quite in the right when he gives skipping, dancing, and running, among the preventives, with abundance of good air, and warm loose clothing adapted to the season.

On the whole, Mr. Chavasse's book is a useful one; and the very excess of his prudence will render it a desirable guide for those whose task it is to rear children of extreme delicacy. The cautions to be observed in the case of a child who has been attacked by hæmoptysis, or who is much predisposed to

sore-throat, are sensible, though we should prefer Italy to the South of France as a residence in the former case.

Other observations are equally judicious, and more extensively applicable; as those on sleep and sleeping-rooms at p. 132-4; against the domestic use of calomel, p. 56 and 143; and the five counts of the indictment against stays, at p. 118-9.

MEDICAL GAZETTE.

Friday, August 7, 1840.

“Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”
CICERO.

MEDICAL EDUCATION IN FRANCE.

ANOTHER measure which has resulted from the recent agitation for medical reform in France—an agitation which does not seem likely to be calmed by these piece-meal alterations of the system, however palatable this or any other small morsel may be—is the appointment of a number of courses of lectures on certain special portions of the medical sciences, which are to be delivered gratuitously by the associates (*agrégés*) of the faculties, and which are intended to serve as complements of the more extended ordinary courses delivered by the several Professors. The associates of each faculty of medicine are to be allowed, on the recommendation of the dean, and with the authority of the minister of public instruction, to deliver such courses in, or in the immediate neighbourhood of, the schools: the permission will be granted for a year, and may then be renewed, and the success which the associates obtain will form part of the grounds upon which their merits will be decided in the *concours* for the professorship.

Among several subjects of interest which the announcement of this measure suggests, not the least important is the indication which it affords that the teach-

ing of medicine in France, which has been so often pointed to, as the model that should be followed in this country, is deemed incomplete and unsatisfactory, by nearly all the parties concerned in it. There is not one of the French medical journals that does not speak of this piece of reform, slight though it be, as gratifying, not merely for its own sake, but because it affords a good omen that the time for a complete reorganization of the whole scheme is not far distant. The most violent opponents of existing institutions in this kingdom are scarcely more anxious for alteration than are nearly all the writers in France. Surely, then, it is not wise that the tendency of all propositions for the improvement of medical education amongst us should be to approximate it more closely to the system of the French!

For the measure itself, its main object seems to be to give authority and opportunities of attending gratuitously those numerous courses of lectures on parts of medicine, of which, in every medical season in Paris, the professors so thickly abound. Although the regular courses of lectures delivered by the professors of the schools are not shorter than those regularly given in this country, it is conceived to be impossible for any one to include in a single, or in some cases even in three or four courses, the whole of the subjects that come within his scope. In England the course of lectures on medicine, or on surgery, for example, which is continued from October to April, professes (and in most cases, we believe, with truth) to comprise all the subjects included in these departments of science; and such a course, in the hands of a capable teacher, may undoubtedly be made to fulfil all the purposes of which such lectures are capable, viz.: to convey, in an acceptable manner, to the mind of the student, and where it is possible, to illustrate, the knowledge of

a complete general system of medicine or surgery, such as he may carry in his mind to the bed-side. How perfectly this may be accomplished, the pages of many of our past volumes will amply testify.

In France the case is very different: a sessional course of lectures is not expected to include more of the subject professed than the time or the taste of the professor permits; and thus those that pretend to be full courses are generally special courses on some part of his subject to which the teacher has of late paid particular attention, or in which, from any circumstance, he feels unusual interest. In short, the French courses are, in many cases, rather an exhibition of the professor than of the subject which he professes to teach, but which he makes the means of displaying his own special learning. There are courses of lectures announced every year in the programmes of the faculties which are hardly quite finished in three or four years, if they ever are; though they ought to be gone through, and in England are gone through, at least once in the single winter session.

Now there is nothing in the nature of the subjects of the several courses, in which it is usual for the whole of medical science to be taught, that need give rise to an error like this. Doubtless, to teach every part of medicine perfectly, and to say all that in the present day is known upon each, would occupy very many hours, and more time might thus be given to a single class of diseases than, with us, is usually devoted to the whole practice of medicine. The size of many of our own monographs is sufficient proof that the subject of each might be the subject of a full course of lectures; and the translations which we have occasionally given of some of the better class of the French lectures, shew that they partake very much of the monographic character.

But we hold that the object of lectures addressed to pupils is not to teach medicine in this manner, but to impart to them the rudiments of the science generally, and to give them the means of working out the detail in actual practice or in clinical study, or to follow out any branch that may most attract them, in accordance with their own, not their lecturer's, views. It is, indeed, quite impossible for one who is not acquainted with the general elements of science, to appreciate, much less to appropriate, lectures on the more abstruse parts of any one department in it: we conceive that this must be plain and evident to every one; and in this constant system of special instruction, we believe, lies one of the main evils of French teaching, and which the present change will tend to perpetuate rather than to remedy. We cannot too often repeat that the large majority of students come to schools and universities, to be made, not philosophers, but practitioners; and the best scheme of medical education is that which will effect this object, and pretend to nothing more. To such a consummation we are glad to believe that medical education is rapidly approaching in this country; and we do earnestly hope that special courses of lectures, though we readily grant that they never can be superfluous, will ever be regarded as works of supererogation.

It is presumed that the subjects taught by the associates will be such as the diseases of the eyes, of the skin, of the mind, of children, of the uterus, of the organs of respiration, and so on; in short, it will rest with the Dean of the Faculty to appoint any subjects which he is led to believe will be omitted or slurred over in the ordinary full courses. Such a plan may be the only mode in which, the original error of the ordinary courses being allowed to continue, the students could be in any degree recompensed; but its evils must be immediately

evident to all. The best case that can now happen will be, that by attending a far greater number of lectures than is at all necessary, the student will be able to hear a number of special courses, in which, if he is fortunate, the whole of the subjects of one English course may be included: the professor, in this case, will treat of his own hobbies, and the associates will be set to work out those which do not happen to be favourites with him. This will be the best that can occur; but in many more cases, the professor, having no particular predilections, but many antipathies, will leave the latter to the associates; and happy will it be if, by a fortunate difference of tastes, they are not abhorred by one as much as by the other. But, perhaps, that which might seem to some the happiest arrangement will prove to the unlucky students the most disastrous. Conceive the professor by choice, and the associates by compulsion, to have all to treat of the subjects of their chief admiration; can any one conceive any thing more fatiguing, or less likely to lead to solid good, than the perpetual laudations by each of his own Diana? Surely, of all the absurdities ever committed, even in medicine, the greatest have originated in the anxiety of monographists to elevate the subject of their several themes into the places of the highest importance, and to prove that there was no field over which it had not sway, and in which it was not prime mover for mischief or for good. Yet these are the errors which the French, like every other system of special instruction, cannot fail to foster, and which we are the more surprised to see them encouraging, when we remember the sensible and spirited remonstrance which was addressed not long since to the government by all the leading surgeons of Paris, on the occasion of the appointment of M. Leroy d'Etiolles to an office in the Central Bureau, for the

special treatment of diseases of the urinary organs.

We cannot, therefore, find any ground to praise this endeavour to remedy an error which might have been very shortly and easily cured by insisting on the professorial courses being made to include the elements of the whole of their several subjects. That, we are well assured, would have been no doubtful remedy; and if, by showing that those who have the working of it are by no means well pleased with the much-lauded scheme of education in France, and that the remedy which they have devised is likely to perpetuate or increase the evil, we can succeed in moderating a little the admiration which some among us entertain towards every thing which is foreign, we shall be glad.

There is, however, one part of the French scheme (but which is not newly introduced in the present alteration), that it would be fortunate for us if we could imitate—we mean the education of the lecturers themselves. In France, by the plan of having associates of the Faculties, each professor, before he reaches his chair, is a practised, and therefore, as far as his language and his manner are concerned, a good lecturer; so that we cannot remember to have heard, during a residence of some time in Paris, a single lecture which, whatever were its scientific or its practical merits, was not fluently and well delivered. Granting fully as much as is fair to the habitual vivacity and the natural *savoir parler* of the French, there can still be no doubt that much of this great advantage results from their system of gradual elevation to the lectureships. It is surely a matter of no mean importance to have the instruction by lectures, which in itself has much that is forbidding, rendered attractive by fluency of speech and ease of deportment; to have the lecturer possess at least a seeming familiarity with his

subject, and to avoid the awkwardness which too often in this country distracts attention, if it does not excite ridicule, and the hesitation from want of confidence, which so exactly resembles that from want of knowledge. We fear, however, the evil will never be remedied so long as we have no preparatory education for teachers as well as pupils, or so long as gentlemen, however talented, are called to perform the full duties of professors as soon as they have become renowned for their writings, or, from any circumstances whatever, have become attached to the medical staff of an hospital.

MEDICAL REFORM IN IRELAND.

To the Editor of the Medical Gazette.

SIR,

EVERY true friend of surgery in Ireland, every well-wisher of our national institutions, must be gratified by the perusal of the judicious and well-merited observations which you have thought it your duty to make in rejoinder to the Dublin Medical Press, relative to your criticism of Mr. Carmichael's medico-political exposé, at the late annual meeting of the Medical Association of Ireland.

Mr. Carmichael stands forth as Mr. Attorney-General; his indictment runs, "that all licensing corporations have prostituted themselves from the high national purposes for which they were founded, and have constituted themselves into what he calls a Dutch auction, for the basest of all objects—the attainment of filthy lucre. He offers proof,—he tenders evidence,—*ex uno disce omnes* the Dublin College,—he calls for condemnation, death, and destruction, and upon the ruins of all to rear up one immaculate tripartite Utopia, which is to exhibit to the admiration of mankind that which the very nature and essence of mankind has forbidden to exist—perfection!

Such reasoning may suit the peculiar logic of Mr. Carmichael's mind—such mode of legislation may be adapted to the florid enthusiasm of those who wish to figure in the page of history as the

authors of some new system, or the not unwise speculations of those who live upon the hope of being one of these days made the instruments of carrying that system into practice; but, sir, if we are to have the intervention of a sober, rational jury, such proceedings are not calculated to sway them. The sound and reflecting portion of society will not argue *a particulari ad universale*—will not indulge hasty and imperfect legislation, however pleasing either may be to inordinate vanity, or aspiring selfishness.

Here you have justly and wisely interposed, and have not only shewn the false reasoning that led Mr. Carmichael to his sweeping anathema, but more than this, the unfounded nature of the facts upon which he relied, and have demonstrated the improved examination in four or five of our most important corporations, from whence, it is fair to conclude, that there has been an average improvement in those examinations in all, in compliance with public opinion freely and in no doubtful terms expressed.

But, sir, Mr. Attorney Carmichael is not alone in this state prosecution; he is sustained by other counsel learned in the law—the editors, proprietors, and contributors to the Dublin Medical Press, who support his indictment, but only by ringing changes to "the self-same tune and words," from all of which, one thing is established beyond contradiction—that the Dublin College has deteriorated its examination and curriculum, has introduced the underselling system, and, alas, that I must say it, "stands alone in its (infamous) glory."

Here it is important to know who are those prosecuting parties who thus offer themselves as Queen's counsel and sergeants at law? I know not how far the editorial we may sustain their incognito at your side of the water, but here they are openly avowed—Messrs. Jacob, Mannsell, Porter, Williams, Hart, &c. &c.; there is no secret, nor, indeed, attempt at secret, in the matter at all. These, and their associates, are almost one and all professors in the school attached to the College of Surgeons in this city; but the strange part of the business is, that these same individuals are the very persons who introduced, advocated, and established the diminished curriculum, the milk-and-water examinations, and the underselling

price of the piece of parchment; and the reason of their so doing was obvious enough. It has always been the misfortune of the Dublin College, strange as it may appear, to be governed entirely by its School: when this was filled with men of large practice, like Messrs. Dease, Todd, Colles, &c., the profession, and the members at large, suffered little from their sovereignty, because *their* interest and the interest of the profession were identical to a certain extent; but the influence of such men has long passed away: the School, with its greatly lengthened staff of lectures, has lapsed into the hands of other parties, scarcely any of whom enjoy any extensive practice: in other words, the self-interest of the present generation of school men is opposed to that of the profession, and manifestly lies in facilitating, in every possible way, the *entré* into the profession: hence the diminished curriculum, the lax examinations, the cheap license, the black-ball by-law, that excludes from the membership and keeps the corporation in its present position, where a certain part are tolerably certain of a majority. The plea, and the cry in justification of these steps, which are recent innovations, always has been, "the College is in danger" from diminished funds; but really, there has never been any danger from such a cause, whereas, from these shameful innovations, the College income has considerably abated.

But the object of this communication is not to expose the inconsistencies of these men, or to hold up what might be justly called their selfish tergiversations to public odium; suffice it now to say, they are sensible of the evil of their ways: in their public discussions they have acknowledged and condemned the rottenness of that vicious system, which, in the name of reform and yielding to public opinion, has been based on the ruin of the wiser and better one that their immediate predecessors established. Will they retrace their steps—will they restore the strictness of examination that did then shed some lustre upon our College—will they recur to a more stringent and extensive curriculum—will they depart from the debasing underselling system, and fix once more upon their license a price that shall ensure respectability? They *can* do all this, as they have undone it all before: *will* they do it? or, like the cat in the

adage, will they let "I would wait upon I could," and so prefer vapid and empty clap-trap declamation about reform and amended legislation, to the undoubted and self-evident pointings of, at once, a wise policy and common integrity? This will be a real reform, and will tend to establish their honesty in the advocacy of it, which under present circumstances is considered rather problematical: if they do this, they will find abundant support among those whom it has pleased them to denominate anti-reformers and Tories.

I have charged not only the underselling system and the diminished curriculum, but also the relaxed and almost merely formal examinations upon the School party. The former is a mere matter of fact, which cannot be denied; both *counts* contained in it were brought forward and established by Mr. Jacob, who is the most prominent of the School party, as well as one of the editors and proprietors of "the Press." But it may seem hard, without any proof, to lay at the doors of the same individual the heavy imputation of empty formal examination. The justification of this, however, will be self-evident, when I remind you that the School *party* act as one man, and that they have in their own persons almost always the majority in the Court of Censors, a list of which I subjoin:—

President.—Mr. Adams, (an annual officer), who has no voice unless equal voting require a casting vote.

Senior or Surgical side of the Court.

Hart.—Professor of Anatomy in the College School.

Palmer.—A friend of the school party, elected by them.

Taggart.

Junior or Anatomical side of the Court.

Benson.—Professor of Physic in the College School.

Hutton.

Hargrave.—Professor of Anatomy in the College School.

Four of the court, with the president, constitute a quorum.

By inserting the preceding remarks, which are not written with an invidious object, but simply with a view to improvement, you will do a public good, and greatly gratify

A REAL REFORMER, AND CONSTANT
READER AND SUBSCRIBER.

MEETING OF THE PROVINCIAL MEDICAL ASSOCIATION.

THE meeting for the present year (being the eighth anniversary) took place at the Audit House, Southampton, the week before last; and the proceedings which took place are most fully detailed in the *Hampshire Independent*. The number present is estimated at one hundred, and the business passed off in the most satisfactory manner.

Dr. Jeffreys, of Liverpool, took the chair in the first instance, as the Preses of last year, but resigned it after some observations, in which he alluded to the various objects which the Association had in view, and the satisfactory manner in which their affairs generally proceeded. He was followed by

Dr. Steed, the president for the present season, who dwelt a good deal upon local affairs; after which, he proceeded to speak of various inconveniences and abuses which exist in the profession, alluding particularly to the present system of farming the poor, &c.

After some business of form, such as presenting addresses to the Queen, &c.,

Dr. Hastings read the report of the Council, in which particular reference was made to the essay of Mr. Ceely, in illustration of the identity of small-pox and cow-pox; large extracts from which were given in our two previous numbers. A very heavy expense was incurred in procuring the coloured engravings which accompany it; not less, it appears, than £700, leaving a balance of only £225.5s. in hand, out of the income of the present year. The report goes on to speak of the circumstances connected with the Vaccination Bill recently passed. Medical reform was next alluded to, and the growing importance attached to it was insisted upon—a little gentle admonition being directed to Mr. Warburton for his laziness and apathy.

Various votes of thanks were then passed. After which

Dr. Forbes mentioned that the £50 offered by Dr. Thackeray, as a prize, had been awarded to Mr. Wm. Davison, Lecturer on *Materia Medica*, Glasgow, for the best essay on the causes of the continuance of fever in England.

Dr. Webster then read the report of the poor law medical relief committee. It was moved and carried that it be printed. An opinion was expressed in

favour of the clauses which Mr. Talford intends to bring forward when the poor law amendment bill is under discussion.

It was next proposed by Dr. Dodd, and carried unanimously, that a circular letter be addressed to the schools, urging the expediency of requiring certificates of vaccination from all pupils previously to their admission.

The next proceeding consisted in reading the report on medical reform, which was done by Dr. Barlow. The Committee stated that the petitions formerly agreed upon had been presented to Parliament, and remarked that the number of such appeals had of late greatly increased, showing the increasing desire for reform which existed. Allusion was made to the fact that medical reform would necessarily interfere with existing Institutions, from which quarters opposition was naturally to be expected. It was hinted that a National Medical College might be framed by the amalgamation of the several bodies now extant, and that a constituency might be organised out of those who had been members during a certain period. Reference was made to the fact of Mr. Warburton having given notice of a bill, and it was urged that, until the nature of the measure to be proposed by him was known, the interference of the Association would be useless. It was, therefore, thought advisable that the Council should be authorized to act on emergency for the members generally, in case of any thing occurring to require their interference before the next annual meeting.

Thanks to the Committee was moved by Mr. Carmichael, and carried.

Dr. Webster, of Dulwich, thought they ought to go rather further than had been done in the report. All the other associations, he argued, had acknowledged the representative system; and not less than 130 petitions, with 4321 signatures, had been presented to Parliament. He expressed some misgivings as to Mr. Warburton's intentions, and advised the Council to ascertain what these really were. He then moved that steps be taken to obtain medical reform, on the principle of uniformity in qualification, and a representative system of government. This resolution was agreed to, and concluded the business of the morning.

In the evening Dr. Dodd read a re-

trospective address on the progress of surgery, for which the thanks of the meeting was voted to the author.

A report on quackery was next presented by Dr. Cowan, the committee being instructed to continue their services till the meeting next year at York, on which occasion Dr. Goldie is to preside.

The retrospective address on medicine was from the pen of Dr. Scott, of Liverpool, in which he pointed out, among other things, the advantages of the Association, and referred triumphantly to the "Transactions." A vote of thanks followed this communication, after which Dr. Barlow presented the report of the benevolent fund, by which it appears that many applications had been unavoidably denied relief from want of funds. A debt of £40, due at last anniversary, had not been paid; and it was therefore resolved to grant no more assistance till the above sum was liquidated, and a balance in hand of £100. It is calculated that the small sum of five shillings from each member would answer the purposes in view; and Dr. Cowan intimated his intention to bring forward a motion rendering this subscription compulsory on the members.

Several professional papers were then read, which we hope to see published in the Transactions, after which various votes of thanks were passed, and the meeting adjourned.

The dinner, which took place the same evening, was numerously attended, and passed off with spirit.

SOME PATHOLOGICAL EXAMINATIONS OF THE ORGANS OF HEARING AND SPEECH IN THE DEAF AND DUMB.

By DR. VINCENZ BOCHDALEK,

Professor of Pathological Anatomy at Prague.

THE object which the author professes to have in view is not to consider what has been hitherto effected in this branch of pathology, but to present the results of the anatomical examinations of the apparatus of hearing and speech in six deaf and dumb persons, which he made with all possible pains and caution.

The first case was that of a deaf and dumb boy, born in 1818. According to the statement of his parents he was not deaf from birth, but became so in his first

or second year. In the second half of the first year of his life he had severe convulsions; he was then for a whole year very ill, extremely weak and emaciated, and affected at the same time with a purulent discharge from the right ear. The loss of hearing was first observed after his recovery from the preceding symptoms.

On September 7, 1830, the child was received into the Deaf and Dumb Institution, where for two years he enjoyed tolerably good health, with the exception of some slight diseases, from which he easily recovered. In the summer of 1833 he was attacked by quartan intermittent fever, from which he did not recover till the middle of September. In November an inflammation of the intestines set in: the boy was taken to the hospital, where he ultimately died of phthisis, in February 1834.

I was permitted, says the author, to examine the head; but with all the precaution and care that I exercised in dissecting the brain, the auditory apparatus, and the organs of speech, I was unable to discover the cause of complete deafness and dumbness; for neither in the soft nor in the hard parts of those organs, or the adjacent regions, could I detect any thing uncommon or different from the normal form; and I was therefore obliged to assume that this child's loss of hearing was most probably dependent on an interruption of the nervous energy of the auditory organs, which (like many other nervous diseases) could not be recognised by any material alteration.

Whether the child were born deaf or not, it is quite impossible to determine; for though their statements could not be gained by anatomical facts, one can place but little confidence in the assurances of the parents. However, there is no ground for the denial of the supposition of *acquired* deafness, which will be made more probable by the following cases, in most of which a congenital and more or less distinct peculiarity of the soft parts, or of both, was discovered.

The second case was that of a deaf and dumb girl, born in 1815. In the opinion of her parents she had lost her hearing at the end of her second year, in consequence of a severe disease, which continued till near the end of her fourth year, and was accompanied by such frequent and severe convulsions that her limbs were often completely distorted. It was after her recovery from these that her parents first found that their child was deaf; or, at least, they believed that before this disease she had heard very well, and had begun to talk. In October 1839 she was received into the institution; but her health was still very poor, her gait was dragging,

her right elbow was immoveable, and she could not stretch out her arm. In 1834, her disease increasing, she was taken into the general hospital, where she died, in October, of exhausting diarrhœa, consequent on extensive ulceration of the intestines.

The brain, the auditory nerves, and the organs of speech, presented no remarkable anomaly. The external ear, and the parts adjacent to the tympanum, were on both sides normal. The *membrana tympani* was of its normal thickness, but on its outer surface more depressed than usual, and very tightly stretched. The outer surface of the right *membrana tympani* was more depressed than that of the left. The ossicula were of their usual size and form, but much more tightly connected both with each other and with the adjacent parts. In particular, the stapes in each ear stuck very firmly in the foramen ovale, and could be got out of it entire only with great care. The muscles of the ossicula were not remarkably altered on either side. The cavity of the tympanum was on each side in every respect normal, as were also the mucous membrane lining its walls and its nerves. The mastoid cells were proportioned to the age of the individual. The osseous part of the eustachian tube, at the end of it adjacent to the tympanum, was narrower than in the normal state, especially in the right ear; so much so, indeed, that it required some care to pass an elastic sound of scarcely one-third of a Vienna line in diameter through it. The labyrinth, up to the semicircular canals, whose walls were disproportionately thick, very compact and ivory-like, and formed at the expense of their narrowed interior, was normal. The membrane of the fenestra rotunda on each side was thickened and leather-like. The pyramidal processes of the vestibules appeared to be both wanting. The meatus internus, with the auditory nerve and its branches, presented no observable alteration on either side.

From this examination it results, 1st, That the complete deafness was produced by more than one important cause; for the unnaturally tense *membrana tympani*, which, according to Savart's experiments, vibrates less than it does in the flaccid condition, was not so adapted with the too slightly moveable ossicula as to propagate the sonorous vibrations that entered the meatus externus to the labyrinth; and, at the same time, the stapes was fixed almost immovably in the fenestra ovalis, so that it was hindered from agitating the water of the labyrinth, and, through its medium, of stimulating the auditory nerve. 2nd, That with such a remarkable narrowing of the eustachian tube, the atmospheric air from the fauces, if not entirely excluded,

was prevented from entering in sufficient quantity for hearing. 3rd, That with the enormous thickness of the walls, and the consequent very confined cavities of the semicircular canals, the elasticity which is necessary for the perception of sound, if not entirely destroyed, was certainly very much diminished; and, lastly, That by the leather-like membrane of the fenestra rotunda, the propagation of its oscillatory movements to the water of the cochlea, and to the auditory nerves, was rendered difficult.

The condition of the osseous part of the eustachian tube, and of the semicircular canals, render it most probable, notwithstanding the opinion of the parents, that this child was born deaf.

The third examination was made on a deaf and dumb boy, born in 1815. In his parents' opinion he had been able to hear up to his third year, and had even begun to speak; but in that year a severe illness attacked him, after which the loss of hearing was noticed. Various means were employed for its removal, but without effect. He was received into the Institute in the summer, and died of consumption in the winter of 1831.

On examining the organs of hearing and speech, I could find no other defect than that in the former all the three semicircular canals on both sides terminated with blind extremities without communicating with the vestibule—a malformation which might well suffice to preclude the power of hearing. It is probable, also, that this defect was congenital, and therefore that the deafness existed before the illness in the third year; for the exact symmetry of the misshapen canals, and the mode in which they terminated (by gradually narrowed extremities as they approached the vestibule), as well as the material by which they were closed, which was exactly similar to that of the rest of their walls, could scarcely have been the result of any process of disease occurring after the parts were formed.

The fourth examination was of a boy, born deaf in 1826, and received into the institution in 1835. His mother was so frightened during her pregnancy with him at the sight of another blind child, that she fainted, and from that time forward was in dread of having her child also born blind. It was certainly not born blind, but its left eye was closed, and its neighbourhood was coloured blue; and it was not till after a long time that he could open it. It was so weak, too, that it could scarcely utter a sound. A short time after birth it was observed to be completely deaf, and to a certain extent weak on the whole of its left side. In the first year of its life the child had a severe

discharge of pus from its left ear, and soon after from its right ear also, which returned in its third year after hooping-cough, in its seventh year after the nettle-rash, and in its ninth year after scarlet fever. When received into the institution the child was weak, but of ordinary size for his age, and possessed of the average mental powers of those similarly deprived of hearing. He had slight scrofulous affections during his residence there, and died of phthisis in April 1835.

The left concha was quite natural; that of the right ear somewhat deeper; the external cartilaginous and osseous external meatus on both sides in every respect normally formed, but with a moderate quantity of a yellow-grey, mucous, granular matter. The squamous and mastoid portions of the temporal bones were well formed, only the cells of the latter were unusually large, considering the age of the child, so that on the right side they even occupied the situation in which, in the normal state, the posterior or internal semicircular canal is placed. In the anterior part of each *membrana tympani* there was a hole; the diameters of that in the right were two and a half and nearly two lines; of that in the left two and one and a half lines. Both holes were of a nearly oval form, and were bounded by the smooth, sharp, and even edges of the remainder of the tympanum, which was, moreover, in both ears, thickened and completely opaque, being, in the right, formed of two easily separable laminae of cartilage, and in the left, completely ossified, except at the above-mentioned hole, and in the strip which is occupied by the handle of the malleus. The mucous membrane of the cavity of the tympanum was in like manner thickened, more spongy and looser than usual, and covered with a tough yellowish mucus. Among the ossicula, the base and the posterior crus of the right stapes were absent, but its head was much larger than in its natural state; the *os orbiculare*, on the other hand, was absent, and appeared to be replaced by the hypertrophied head of the stapes. These bones were also almost immovably connected together. The base of the left stapes was so firmly fixed in the *fenestra ovalis*, that even with all possible care it could not be extracted without injuring it; the position of the right stapes was, moreover, so distorted, that its remains, with the anterior crus, seemed sunk deep into the *fenestra ovalis*, while the rudiment of the posterior crus projected out of the same *fenestra* into the cavity of the tympanum. The *eustachian tube* and the muscles of the ossicula presented nothing peculiar.

The vestibule was less spacious than

natural; there were no orifices of the semicircular canals; in their place there were formed in the right ear, in which the canals were completely absent, shallow fossæ, and in the places of the canals themselves, the mastoid cells extended into the situation which they should have occupied. In the left ear the same disposition was, in general, presented, only in its confined vestibule there were not even the fossæ corresponding to the orifices of the semicircular canals, but two unequally long and narrow tubules closed at both ends, and connected with one another just at the situation which corresponds to the common union of the upper and posterior canals. One of these was three, the other two, lines long, and both were rather smaller than the healthy canals: neither of them was connected with the vestibule: the lining of the latter was thickened.

The cochlea was normal on both sides; only on the left the opening from the vestibule into its scala was closed with a thickened membrane. The meatus internus, especially on the left side, was of less than half its usual diameter. The auditory nerve of the same side appeared only as large as a fine thread, while that on the right side was scarcely half as large as in the normal condition. The substance of the former was almost transparent, and presented no genuine nervous matter. The right auditory nerve gave nearly a third of its filaments to the facial in the meatus.

The upper and posterior surface of the pyramid of the petrous bone was far more smooth than usual, so that one might at once have concluded on the complete absence, or the abnormal position, of the semicircular canals. That portion of the groove for the transverse sinus which descends at the root of the posterior surface of the base of the petrous bone was extraordinarily broad and deep on both sides, and appeared to have offered an obstacle to the development of the posterior semicircular canal.

The apparatus of the voice and the speech, which I examined with equal care in all their relations, presented nothing remarkable. From the condition of the auditory organs it results:—First, that the child was born deaf, a conclusion which is established by the deficiency of the semicircular canals, the confined vestibule, and the condition of the mother during pregnancy. Second, that besides these sufficient causes of deafness, chronic inflammation occurred at different periods after birth, in the interior of the ears, which probably terminated in ill-conditioned suppuration, by which the *membrana tympani* was destroyed; and that by long-continued and repeated inflammations the *membrana* was thickened and rendered cartilaginous

and osseous, the lining of the cavities of the tympanum and vestibule were made dense, and the ossicula auditus were ankylosed. And, thirdly, that the weakness and minuteness of the auditory nerves might perhaps be regarded as an origin of the congenital deafness, or, more probably, as the result of the atrophy consequent on their inactivity and paralysis.

The 5th case was that of a girl of ten years old, who was born deaf in 1827. Her parents were healthy, but her father's brother was deaf from birth. She enjoyed excellent health all her life, till she caught scarlet fever, and died in January 1838.

The right external ear down to the tympanum was quite natural. On the left side, in the lower wall of the bony portion of the external meatus, and somewhat more than a line from the tympanum, there was a roundish aperture as large as a vetch, surrounded by sharp and smooth edges, and, in my opinion, the result of an original arrest of development. It was closed by a thick tough periosteum, which rendered the lower wall of the meatus complete. The left membrana tympani was thickened, leathery, and opaque; the right was normal. The cavity of the tympanum was very much flattened from without inwards, so that the most prominent part of the membrana was scarcely one-fifth of a line from the promontory, though in the natural state they are usually from three-fourths of a line to a line apart. This anomaly was especially observable in the left ear, in which also the promontory was much less conical, but broader at its base than usual. The fenestra ovalis on each side was well formed; the F. rotunda on the contrary was a narrow fissure directed obliquely from above downwards, and which was moreover almost completely closed by the very swollen, thick, mucous membrane of the cavity of the tympanum. The ossicula and their muscles exhibited no anomaly. The mastoid cells, and their communication with the tympanum, were very spacious; the eustachian tube and the nerves of the tympanum normal. The mucous membrane of the tympanum, except that part which covers the membrana, was at least four times as thick as usual, spongy and loose, though tough. The vestibule, semicircular canals, cochlea, and two aqueducts, and the internal meatus, were on either side quite natural. The origins of the auditory nerves appeared rather small; the nerve on the right side especially seemed small, for it gave a very large fasciculus of fibres to the facial, instead of a fine fibril. On the left side this was not the case; the texture of the nerves presented nothing anomalous.

The organs of speech were in every respect healthy.

In this case the cause of the deafness was evidently in the walls of the tympanum; the effects of the changes in which, in preventing the necessary propagation of the vibrations, must be sufficiently evident; and as the history of the child shows that she had never suffered from any disease of the ears after birth, it is most probable that all the various peculiarities which they exhibited existed at the time when she was born.

The sixth examination was made on the body of a young man, who was born in 1814. His parents said that he could hear till he was three years old, when he was attacked by some nervous disorder that lasted for four or five weeks, and left him deaf. Since that time he had no disease, not even those common in childhood; and he had never suffered from discharge from the ears. His parents and sister had all good health. Having usually enjoyed excellent health, he died of phthisis in 1838.

Both external ears, as far as the membrana tympani, were healthy; the cavities of the tympana were also normal. The malleus and incus were in their natural state, but the base of the right stapes was closely united by bone to the margin of the fenestra ovalis, and immovably set in it. The fenestra itself had an irregular jagged edge, and its longest diameter was at least one-third shorter than usual. On the left side this was not the case. The muscles seemed healthy, except the right stapedius, which was remarkably atrophied. The eustachian tubes, and the mucous membranes, and nerves of the tympana, exhibited nothing unnatural.

Both vestibules were so small that neither of them would have held a vetch. The lining membrane of the left vestibule was so thickened that it nearly filled its cavity; its posterior wall presented a roundish fossa as large as a millet-seed, like an indication of the orifice of one of the semicircular canals. The opening of the vestibule into the scala vestibuli was in each ear completely closed by bony matter. Of the aquæductus vestibuli I could find no trace. Instead of the upper or anterior semicircular canal there were in the right ear only two cellules of a longish round form, and as large as millet-seeds, and covered by a fine membrane, which were separated by a vertical bony septum. On the left side there was not a trace of the corresponding semicircular canal. The posterior or inner canal was entirely deficient on both sides, its place being occupied by a spongy osseous substance, whose cells communicated with those of the mastoid process. The external or horizontal canal was probably wider than usual; but its whole cavity was filled from one end to the other by much

firmer, more compact, and more clear-coloured bone than its walls were composed of, so that, instead of a thinly walled brittle tube, there was a more than usually dense arch of bone.

The cochlea had its usual external form; but its cavity, like that of the last mentioned semicircular canal, was completely filled with a similar osseous matter, and so united with the malleolus and the lamina spiralis, that they could not be distinguished one from another. The aquæductus cochleæ was similarly obliterated.

The internal meatus was very spacious; the origin and course of the auditory nerves of both sides were as usual, but they were much smaller than natural, and both gave a large fasciculus of fibres to the communicans faciei in the meatus. The nervous cochlea was very small, and, at the perforated plate at the bottom of the meatus, suddenly changed its aspect into an atrophied very small mass, presenting only the appearance of cellular filaments, which coalesced with the periotem of the meatus. The vestibular nerve was larger than the cochlear, but still remarkably smaller than usual.

The whole of the organs of speech were perfectly natural.

The deafness in this case was amply accounted for; but the history given by the parents of the child renders it, in some measure, doubtful, what portion of, if not all, the changes found after death, were the result of original malformation. If their account that the child could hear till he was three years old be true, it would favour the view of those physiologists who maintain that the semicircular canals are a less essential part of the organ of hearing than the vestibule, and still less so than the cochlea, of which we find the analogue in many of even the invertebrata; at least, it would prove that, under certain circumstances, a single semicircular canal may be sufficient for hearing.

The author concludes from these cases, and some other considerations, that the proximate cause of dumbness is the simplest in the world; it is clearly, in most, if not in all cases, induced by deafness. The healthy hearing, and in part the observing of the movements of the mouth of the person speaking, are the most indispensable conditions for the gradual development of the power of speech, just as hearing is generally the only correct means of estimating speech; and where this sense is completely deficient, no speech could possibly be learnt, though the organs of speech were ever so sound and well formed. It may, indeed, be objected that an organ long unemployed gradually loses the power of performing its functions, and falls into a kind of paralysis. But this

law seems to have but little application with reference to the organs of speech in the deaf and dumb; for the tongue is a part which even the dumb person knows how to exercise, and it is only for the one purpose of articulate speech that his tongue is less employed than other persons. The inarticulate sounds that the dumb frequently utter are commonly palatine and lingual. In no case have I succeeded, with all the care I could adopt, and even by comparing them with the organs of speech of healthy persons, in detecting any essential difference in those of the deaf and dumb.

The opinion of those physicians who look for the cause of deafness and dumbness, especially those which are congenital, in a paralysis, or some disease like amaurosis of the auditory nerves, or the corresponding part of the brain, and who support their opinion by saying that organic alterations are rarely to be met with, I cannot, after my few observations, coincide with; for in six cases I was unable to find any material alteration in only one; and other physicians and anatomists, as Itard, Ackermann, Haughton, Müller, Cock, and many more, have also met with organic malformations of the auditory apparatus in similar cases.—*Medicinische Jahrbücher des k. k. österreichischen Staates*, Bd. 30, St. 1, 2.

ROYAL COLLEGE OF SURGEONS IN LONDON.

MR. VINCENT was recently elected President, and Mr. Guthrie and Mr. White, Vice-Presidents, for the ensuing year.

COLLEGIAL TRIENNIAL PRIZE OF FIFTY GUINEAS.

The Subject for this Prize is,

The Structure and Functions of the Lungs.

Candidates to be members of the College, not of the Council.

The dissertations to be in English, and to be distinguished by a motto or device, accompanied by a sealed paper, containing the name and residence of the author, and having, on the outside, a motto or device corresponding with that on the dissertation.

The dissertations to be addressed to the Secretary, and delivered at the College before Christmas Day 1842.

The manuscript Prize Essay, with every accompanying drawing and preparation, will become the property of the College: the other dissertations, and their corresponding sealed papers, will be returned upon authenticated application within the period of three years; after which period the papers containing the names of the

respective authors will be burned, unopened, and the manuscripts will become the property of the College.

EDMUND BELFOUR, Sec.

July 15th, 1840

JACKSONIAN PRIZE OF TWENTY GUINEAS.

The Prize Subject for the year 1841 is,
Injuries of the Thorax, and Operations on its Parietes.

Candidates to be members of the College, not of the Council.

The dissertations to be in English; and the number and importance of *original facts* will be considered principal points of excellence. Recited cases to be placed in an Appendix.

Each Dissertation to be distinguished by a motto or device, and accompanied by a sealed paper, containing the name and address of the author, and having, on the outside, a motto or device corresponding with that on the dissertation.

The dissertations to be addressed to the Secretary, and delivered at the College before Christmas Day 1841.

The manuscript Prize Dissertation, and every accompanying drawing and preparation, will become the property of the College.

Those dissertations which shall not be approved, with their accompanying drawings and preparations, and correspondent sealed papers, will be returned upon authenticated application within the period of three years; and those manuscripts which shall remain three years unclaimed, and every accompanying drawing and preparation, will become the property of the College; at which period their accompanying papers, containing the names of the respective Authors, will be burned, unopened.

There are two prize subjects for the present year, 1840, viz.

Nævi and other Erectile Tumors, their Structure and Treatment; and Hemorrhage, spontaneous and accidental,—the Nature and Treatment,

The dissertations upon which must be delivered at the College before Christmas Day next.

EDMUND BELFOUR, Sec.

July 15th, 1840.

LIST OF GENTLEMEN ADMITTED MEMBERS,

Friday, July 21, 1840.

W. S. Lucas.—C. H. Garstin.—J. Dutton.—R. Galvin.—J. E. Bath.—A. O. Leete.—H. F. Butt.—R. Botton.—J. T. Dunn.—J. Moline.

Monday, July 27, 1840.

C. S. Bompas.—T. G. Bush.—G. H. Makins.—G. S. Mitchell.—W. F. Shorbridge.—J. H. Evans.—J. G. Henry.—J. H. Wrentmore.—P. L'Anglois.—R. G. F. Smith.—J. N. Tresidder.—M. Murphy.—E. R. Houlden.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, July 23.

R. Pyper, Tullamore.—J. A. Stace, Southampton, Haants.—J. Taylor, Wargrave, Berks.—W. Clapp, Exeter.—S. Hobson, Northampton.—C. Godson, Heckington, Lincolnshire.—J. Moss, Macclesfield.—J. C. Bucknill.

Wednesday, July 29.

T. B. Hopkins, Chatham, Kent.—F. J. Lowes.—R. H. Wood, Glenshill, Salop.—C. H. Dobson, Northallerton.—C. B. Sewell, Linton, Cambridge-shire.—J. Brindley, Leek, Staffordshire.—H. Bursey, Brighton.—J. Spicer, Lambourn, Berks.—D. B. Whipple, Plymouth, Devon.—J. H. Jackman, Temple Blond, Somerset.—H. M. Blaker, Brighton.

NOTE FROM MR. OWEN.

To the Editor of the Medical Gazette.

SIR,

HAVING seen in your last (44th) number a letter headed "Mr. Owen and his Reviewer," I beg to say that it is not my intention to reply to that letter; and that, so far as I am concerned, the controversy to which it relates is at an end. I have asserted nothing in my published observations upon this subject which I do not know to be true; but I owe it to myself to express my regret, that the irritation produced by the charges so pertinaciously advanced against me, should have led me, in some passages, into the employment of language which my calmer judgment disapproves.—I remain, sir,

Your obedient servant,

RICHARD OWEN.

London, July 28, 1840.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

July.	THERMOMETER	BAROMETER.
Wednesday 29	from 57 to 76	30.11 to 30.13
Thursday 30	54 73	30.05 30.01
Friday . . 31	51 67	30.07 30.12
August.		
Saturday . 1	44 74	30.13 Stat.
Sunday . . 2	47 79.5	30.13 30.12
Monday . . 3	52 81	30.12 30.10
Tuesday . . 4	49 81	30.10 30.07

Wind N.E. on the 29th, S.W. on the 30th, N. on the 31st ult. W. on the 1st instant, S.W. on the 2d, W. on the 3d, and N. on the 4th.

Except the 30th ult generally clear.

CHARLES HENRY ADAMS.

NOTICE.—"Amicus." We agree. If the address be forwarded, a copy shall be sent.

ERRATUM.—In Mr. Hott's case of Detached Abdominal Tumor, p. 693, col. 1, lines 9 and 10, for "periosteum," read "peritonæum."

WILSON & OGILVY, 57, Skinner Street, London.

Showing the Number of Deaths from all Causes, registered in the Four Weeks ending July 18, 1840.

Causes of Death.	June—July, 1840.				Weekly Average, 1838.
	June 21—27th.	28—July 4th.	5th—11th.	12th—18th.	
Small-Pox	12	16	11	13	73
Measles	36	19	20	22	11
Scarlatina	39	53	40	41	29
Hooping Cough	21	17	16	19	40
Croup	6	8	7	6	7
Thrush	11	9	7	2	6
Diarrhœa	8	10	9	11	8
Dysentery	2	..	..	3	2
Cholera .....	..	..	2	..	3
Influenza	1	3	1	1	1
Typhus	23	24	19	27	78
Erysipelas	7	4	6	12	8
Syphilis	1	..	..	..	1
Hydrophobia .....	..	..	..	..	2
Total	167	163	138	157	265
Cephalitis	11	19	8	16	10
Hydrocephalus	31	30	27	44	34
Apoplexy	17	17	12	15	19
Paralysis	9	12	29	16	14
Convulsions	67	58	51	74	67
Epilepsy	5	8	4	5	4
Insanity	1	3	..	1	1
Delirium Tremens	6	2	1	2	1
Dis. of Brain, &c.	10	8	7	6	6
Total	157	157	139	179	156
Quinsey	1	4	1	2	2
Bronchitis	3	7	2	10	8
Pleurisy .....	..	2	1	1	2
Pneumonia	34	44	62	45	71
Hydrothorax	4	..	6	9	6
Asthma	8	9	10	15	28
Consumption	145	156	144	142	146
Dis. of Lungs, &c.	9	5	14	4	10
Total	224	227	240	228	275
Pericarditis .....	..	2	..	1	3
Aneurism	1	2	..	1	5
Dis. of Heart, &c.	16	14	18	20	15
Total	17	18	18	22	16
Teething	11	22	29	24	15
Gastritis—Enteritis ..	20	19	17	25	17
Peritonitis	3	2	..	1	1
Tabes Mesenterica ..	4	5	3	5	3
Ascites	1	..	1	1	4
Ulceration .....	..	2	..	2	1
Hernia	2	..	3	..	2
Colic or Ileus .....	..	1	1	2	4
Dis. of Stomach, &c. ...	3	5	11	8	4
Hepatitis	1	1	3	1	1
Jaundice	2	1	..	3	2
Dis. of Liver, &c.	6	6	8	8	7
Total	53	64	76	80	57

Causes of Death.	June—July, 1840.				Weekly Average, 1838.
	June 21—27th.	28—July 4th.	5th—11th.	12th—18th.	
Nephritis	1	..	..	1	5
Diabetes .....	..	..	..	..	4
Stone .....	..	..	..	..	4
Stricture .....	..	..	..	..	6
Dis. of Kidneys, &c. ...	4	4	7	2	3
Total	5	4	7	3	5
Childbed	5	5	9	5	8
Ovarian Dropsy .....	..	2	..	..	3
Dis. of Uterus, &c. ...	..	2	3	2	2
Total	5	9	12	7	10
Rheumatism .....	..	2	1	4	4
Dis. of Joints, &c. ...	6	5	5	2	4
Total	6	7	6	6	8
Ulcer	2	2	2	..	4
Fistula .....	..	..	..	..	4
Dis. of Skin, &c. ....	..	..	1	..	4
Total	2	2	3	..	1
Inflammation	4	3	4	7	18
Hæmorrhage	4	1	12	3	4
Dropsy	37	35	27	32	34
Abscess	2	3	2	4	4
Mortification	6	2	5	7	4
Scrofula	2	..	4	5	1
Carcinoma	6	8	8	7	6
Tumor	1	1	9	2	1
Gout .....	..	..	..	1	1
Atrophy	12	5	2	4	4
Debility	21	18	23	11	12
Malformations	1	..	1	..	1
Sudden Deaths	14	28	16	11	12
Total	110	104	113	94	102
Old Age, or Natural } Decay	48	44	61	64	79
Intemperance .....	..	2	..	..	4
Privation .....	..	2	1	..	6
Violent Deaths	28	22	24	25	25
Total	28	26	25	25	26
Causes not specified ..	2	6	2	2	13
Deaths from all Causes	824	831	840	867	1013

AGES.			
June—July.	0—15	15—60	60 & upwards.
June 21—27th	409	283	131
28th—July 4th	408	281	141
5th—11th	387	282	169
12th—18th	420	288	159
Weekly } Average, 1838 }	466	352	192

Estimated Population, 1840.	June 21st—27th.	28—July 4.	5th—11th.	12th—18th.	Weekly Average, 1838.
West Districts, 308,920	144	109	123	132	156
North Districts, 414,458	139	151	169	172	172
Central Districts, 369,722	174	158	172	182	208
East Districts, 411,635	170	163	161	183	239
South Districts, 450,265	197	248	215	199	194
1,955,000	824	831	840	867	1013

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LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School

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INJURIES OF THE HEAD, continued.—*Fracture of the Cranium: Simple, Compound, and Counter-fracture.*—**SEPARATION OF THE SUTURES.**—*WOUNDS of the BRAIN or its Membranes.*—**CONCUSSION and COMPRESSSION.**—*Their Nature and their Treatment.*

FRACTURES.

ANY of the injuries we have spoken of may be accompanied by fracture of the skull: the fracture may happen at the point where the blow has been received, or at a distance: the former is termed direct, the latter indirect, or, as it is aptly named by the French, fracture by *contre-coup*: it may be with or without depression. A fracture by a contusing body is usually a more serious injury than when it is produced by a pointed instrument.

A fracture may implicate the external table alone, or may affect both; in the former case the region of the frontal sinuses is usually the affected point; in the latter, any region of the skull may have suffered.

Where the bones, though fractured, have not changed their situation, so as to compress the brain, it is termed *simple*, but, however simple, there is generally sufficient injury to render the chance of inflammation and compression probable. It is not always easy to detect the fracture; indeed, few things are more obscure than its diagnosis; sensible signs alone are sufficient to assure us of its existence. It may be a

simple fissure, and may be confounded with the natural or Wormian sutures; but every one ought to be so familiar with the situation of those sutures as to render that mistake improbable. Still, in the *Mélanges de Chirurgie*, of Saucerotte, is the case of a priest, who, tripping up, fell on his back and injured the occiput. The integuments were incised, the occipital bone exposed, and it presented a transverse division. The trepan was about to be applied, when one of the surgeons opposed it, saying that there was a large Wormian bone, by which the idea of fracture was conveyed. The patient got well, and bequeathed his skull to Nouvelle. The cranium afterwards figured in the collection of Saucerotte: the Wormian bone occupied the place of the superior angle of the occiput; it was nearly two inches square. Such a mistake would have been comparatively unimportant to a surgeon who, for a simple fracture, did not conceive the trepan necessary, and I believe the greater number of surgeons hold that opinion, but under other circumstances it might be a fatal mistake.

A compound or multiple fracture is always produced by direct violence; it may extend through a part, or the whole of the injured bone, or even beyond it; it may be radiated or linear: in these cases the violence has often exhausted itself at the point, and the chances of concussion are lessened. But a compound fracture which is not radiated may have more or less tortuous branches, which extend far and implicate many bones. In this variety there is usually concussion, or contusion of the cerebral pulp, with extravasation of blood.

Supposing the cranium not to be exposed, what symptoms would justify us in supposing that fracture exists? We should consider the nature of the instrument, the force of the blow, the sensations experienced at the moment, and the strength

of the skull at the injured point. If the instrument were very hard, the blow violent, and inflicted upon a weak point of the cranium; if the patient, more or less insensible, automatically raised the hand to the injured part; the presumption would be, it is said, in favour of fracture; still those symptoms may exist without it, and fracture may exist without any of these concomitants.

Although fracture may then exist, if the integument be entire, without any marked symptom to reveal it, I incline to the opinion that the circumstances just stated would justify our making an incision to ascertain the exact condition of the part. There is another symptom upon which some surgeons place great reliance, when symptoms of compression are present after a violent blow on the head—I mean the state of the pericranium: if it be detached they believe there is fracture, and in many cases unquestionably they would be right; but then, it must not be forgotten that the pericranium may be detached without fracture, and may be adherent with.

In each of these cases the necessity for the trepan is not made out: in the first, because the injury is not serious enough; in the second, because it is too serious. In fact, in the first, if the soft parts are not divided, the spiculæ be not moveable, and there is no symptom of compression, we should abstain from it. In the second, we should abstain, because to evacuate the extravasated blood many crans of a trepan may be insufficient. It could, in either case, exercise no salutary influence upon the concussion, and may increase the chances of inflammation. In either case a moveable spicula could generally be removed without it.

If the bones of the cranium were at all points equally solid and resistant, if foreign violence acted only on small points, direct fractures might alone be expected. But as some points of the cranium are less resistant than others, the force which was insufficient to fracture the point upon which it was directly applied may produce a fracture at a distant point: this is the fracture by *contre-coup* or *counter-fracture*; these injuries are also termed *contra-fractura*, or *contra-fissura*. These fractures are explained by the unequal resistance of the parietes of the cranium at different points of its extent. To make the explanation intelligible, we will suppose a blow to be applied on the os frontis, with a force which may be represented by the number 20: at this point the os frontis is thick, and opposes a resistance equal to twenty-five; the bone, therefore, does not give way at that point; but the impression is communicated to the orbital portion of this bone, which is thin and fragile, and its resistance

may be expressed by the number 12; it yields to a power, enfeebled by transmission it is true, but still strong enough to produce fracture. Experience supports the reasoning: many fractures of the orbit have been observed as consequences of blows directed upon the forehead, the coronal portion of the bone being intact. But the impression may be communicated to an adjoining bone; the os frontis may be struck, the parietal is fractured; it may extend to a greater distance, to a point diametrically opposite to that on which the blow has been received: a blow on the forehead may fracture the occiput; a blow on the vertex may fracture the base.

These cases present difficulties in diagnosis; sensible signs of the accident are wanting: we are, therefore, obliged to rely upon rational ones, which are very unsatisfactory. Much reliance used to be placed upon a circumstance which, in my opinion, is utterly valueless. It was assumed by Lanfranc, that the patient, at the moment of the injury, would hear a noise, similar to that of a pot at the moment of fracture: it is very improbable that, at such a time, the patient would distinguish any such thing; and if he had, at the moment we require the information, he is insensible. Again, it was necessary to look for a tumid point; this was supposed to be the seat of counter-fracture: where are we to look for it, if the fracture occupy the base of the skull? Again, it was proposed to place between the teeth a piece of string, or a straw, and the head was to be shaken, by small tugs upon the straw: the point where, under these circumstances, the patient complained of pain, was believed to be the seat of fracture. This plan has long been very properly abandoned as valueless. Again, the occurrence of pain at the seat of fracture, when the patient cants, speaks, or when we press at different points, is not entitled to confidence, for simple contusion may occasion it. The œdema, tumefaction, or separation of the pericranium, is no certain evidence of fracture; an injury to the soft parts may produce it. Neither do we accord our belief in the old doctrine, that if the head be shaved, and covered with a poultice, the point corresponding to the fracture will be more humid than any other; nor that vomiting, vertigo, faintness, paralysis, or convulsions, are any sufficient evidence of the existence of fracture. It is believed that fractures of the base usually produce bleeding at the nose or the ears; but simple concussion may produce these signs. The occurrence of amaurosis of one or both eyes, paralysis of the face, a serous fluid flowing from the ears, some days after the accident, are circumstances of grave suspicion, the latter two symptoms leading to the supposition that the petrous portion

of the temporal bone has suffered; but they are merely circumstances of suspicion. The eye, when there is denudation, or the finger, where the integuments are intact, alone furnishes conclusive evidence of the existence of fracture. To acquire more certain data when the bone is not uncovered, should incisions be made, and the bone exposed? On what point should the incision be made? why unnecessarily resort to any operation which may singularly retard the cure? Symptoms which clearly indicate urgent signs of compression alone justify our resorting to incision; and even then the signs of effusion from which compression results are so illusory that the indication is rarely precise.

A counter-fracture may affect the inner table alone, and the symptoms may be those of compression; such a case occurred to S. Cooper at Brussels, and there are others besides those of Paré and Bilguer on record. When the fragment is displaced, it may prick the membranes of the brain and occasion symptoms of irritation; but then, how many causes of irritation of the brain are there besides a spicula of bone? With isolated fracture of the internal table I believe there is always displacement of the fragment. As a general rule, when fracture exists without giving rise to compression, concussion, or inflammation, we have no right, surgically, to interfere; our course then is to watch, to diet, and to pursue the evacuant system of treatment.

There may be *separation of the sutures*; it is an accident which can scarcely happen to an old man or even an adult, but it now and then happens to a child. I recollect a child of three years, over whose forehead a waggon wheel passed and produced this state; the antero-posterior diameter of the cranium could be greatly lessened, by passing the posterior portion within the anterior: the case did well. There are several cases on record. One would naturally expect, in such a case, great concussion and extravasation; though in the case I allude to there was no evidence of the latter symptom, though the concussion was severe.

INJURIES TO THE BRAIN.

A wound may directly implicate the brain itself, or its coverings. Wounds of the brain have not all the gravity which was formerly believed to attach to them. The examples of incision, made to evacuate pus or other fluid, are by no means rare; and it has not been remarked that the symptoms have been aggravated by the operation, but, on the contrary, it has sometimes exercised a very salutary influence upon them. It is not the solution of continuity, or even the loss of substance, which constitutes the gravity of these dis-

cases; but concussion, compression, or consecutive mischief. The most remarkable examples of this kind are furnished by incised wounds; among them is the famous case of the dragoon, mentioned by Lamotte. The sabre cut through the right parietal bone to the extent of two inches, and the left to the extent of three or four inches, just above the ear. This wound, which included not only the membranes of the brain, the longitudinal sinus, and even the brain itself, and which was followed by syncope from the great loss of blood, was cured in two months and a half. Many similar and scarcely less marvellous cases are on record in works on military surgery.

Puncturing instruments, and even spiculae of bone, may wound the brain or its membranes; the great object is to extract the puncturing instrument if it remain in the wound. If the portion of the instrument left in the cranium be insufficient to allow of our laying hold of it, a crown of a trepan may be necessary for its extraction. It has been customary to range among fractured wounds of the brain and its meninges the lance-wound received by a celebrated person, Francis of Lorraine, Duke of Guise, before Boulogne. The arm, according to Boyer, entered below the eye, and was directed obliquely so as to come out on the other side between the neck and the ear. If the arm had entered above the eye the brain must have been wounded, but as it entered below, it passed through the face and not the brain; the cure of the wound is therefore the less extraordinary.

Contusing bodies wounding the brain are usually projectiles impelled by gunpowder. They sometimes carry off considerable masses of the brain, or the ball may remain in its substance. If we carefully examine these cases a singular result is developed. They are comparatively less frequently mortal than similar wounds in which the brain has not directly suffered. Extravasated fluids find a ready escape, and the chances of compression or consecutive inflammation are lessened. It is very extraordinary to read the accounts of enormous wounds of the head, with mortification of portions of the brain, get well after the elimination of the sloughs, and the development of granulations on the surface of the brain itself.

In such cases the dressing cannot be too simple, and we cannot be too much on the alert. Before the wound is dressed a very careful examination must be made to ascertain that no foreign body remains in the wound. If, however, the body be imbedded in the cerebral pulp, we should not usually proceed far in attempting to pursue it, or we may materially increase the mischief; and many cases are recorded

where foreign bodies had remained long in the substance of the brain without occasioning great suffering. Bartholin mentions a case where a man had the point of a sword in his brain for fourteen years. Zacutus Lusitanus mentions the case of a woman who died of fever: between the meninges and the cranium the blade of a knife was found, with which she had been wounded eight years before. Many similar facts are recorded, which sufficiently show, that to abstain from too much meddling, in search of foreign bodies in the brain, is wise; but they do not sanction us in leaving them there when they might be easily removed.

CONCUSSION OF THE BRAIN.

A violent blow upon the head, accompanied or not with a wound of the integuments, may excite an oscillation or vibration of the parietes of the cavity of the cranium. The motion so impressed, and the change of form consequent upon it, expose the brain to a series of slight contusions, which may bring about a longer or shorter suspension, or a more or less complete aberration of its functions. This species of injury is known by the term *concussion*; its effects are, the symptoms of the lesion. The extent of the concussion bears a certain proportion to the force of the blow, and the degree of the resistance. With an equal force two blows may have a very different result, in consequence of the difference in the resistance; where the resistance is least, the vibration is least, and the concussion least. A very common experiment makes this evident: Take in the hands a board, strike one end of it with the broad extremity of a hammer. If the texture of the board resist, the vibration will be very sensibly felt; but strike it with the pointed end of a hammer, the texture gives way, and the vibration will be scarcely perceptible. The brain exactly filling the cranium, we readily comprehend that if the latter suddenly changes shape, the former must be as suddenly contused or compressed. This is what passes at the moment of a blow; at the injured point the cranium is, for the moment, flattened, whilst in the opposite direction it is enlarged. These changes of form are extremely rapid, and the oscillations continue for some time. If the oscillations be very great, if the concussion be extreme, death may happen at once. Concussion, then, may, in the last analysis, be defined a compression, but an *instantaneous and general one*.

Concussion of the brain may be a consequence of direct or indirect injury, a blow on the head, or on a distant part: thus, in a fall upon the feet from a height, concussion may happen, though the force is much

broken by the intervention of many joints, before it is communicated to the brain.

Up to the present moment we have vainly sought to distinguish the anatomical lesions of concussion. Two facts seem to prove that, when extreme, the encephalic mass is lessened in bulk; but these facts are insufficient to frame any law on the subject. One of these facts was observed by Littre, the other by Sabatier. The first was the case of a young prisoner, who sought to destroy himself, but had not the means of doing it; to accomplish his object, however, he ran from one end of his cell to the other, and precipitated himself, head foremost, against the wall. The concussion was so violent that he never rose. At the examination after death, Littre found the brain lessened in bulk, and a space existing between it and the bones of the cranium. "I have seen," says Sabatier, the same thing in a person who died suddenly from the effects of a blow on the head."

Some years ago Gama attempted, with much ingenuity, to explain the phenomena of concussion. Concussion, says he, whether direct or indirect, acts upon the brain, by impressing upon it movements which follow certain lines which had not previously been determined, but which he conceives he has demonstrated by an experiment. He took a glass globe, in which he put a certain number of pieces of straw, chaff, or bristles; this globe was then filled with isinglass jelly, which, when cold, took as near as may be the consistency of the human brain. The globe was then closed, and upon it blows were inflicted, either with the hand or an instrument, so as to produce as strong a vibration as was consistent with the integrity of the vessel. The blows produced an oscillation through the whole mass of jelly, and as much more decided as the blows were harder; but the motions were not uniform, as was evident by the vibrations of the straws. Moderate percussion was always very sensible at a point between the glass and the jelly, but the effect did not extend far into the substance. If the percussion were more violent, the mass was momentarily detached from the side of the vessel at the point struck, and a similar effect was observed at the opposite point; the whole mass seemed for a moment to be compressed on all sides, and to occupy less space. This kind of double impulsion directs the shock towards the centre of the mass in two opposite directions. The particles which obeyed the two impulses, that is to say, which were directed inwards from those two opposite points, afterwards vibrated in opposite directions, and continued to move irregularly for some time. The vibrations of the globe itself could not be distinguished under any percussion, neither by the eye

nor by the hand. If you repeat the experiment, you will find that Gama's statement is as near as may be correct: he believes it to be an exact representation of what passes in the head under direct percussion, which produces concussion. If it be so, we see that the first effect of the blow is propagated from without inwards; that it acts on one or two points according to the violence of the shock.

Symptoms.—What is desirable for us to know is, what are the phenomena of concussion when not immediately mortal? In a first degree it is characterized by swimming sensations in the head, noise in the ears, dropping of the eyelid, and sudden incapacity of the lower limbs, so that the patient staggers or falls to the ground; from this condition he may soon recover, but lassitude may continue for two or three days; there may be wandering pain, loss of appetite, inability to exertion of any kind, but after a certain time this is gradually dissipated: this state is usually known as stunning.

In a *second degree* there is sudden loss of consciousness, so complete, that the patient recollects nothing of his accident when he comes to himself; he falls to the ground; the muscular system no longer acts; if a leg be raised it immediately falls down again; there may be spasmodic or convulsive action of the stomach, the rectum, and the bladder, causing, involuntarily, vomiting, evacuation of *feces* or urine. The respiration and circulation however continue, and life is preserved. At the moment of concussion, palpitations are often experienced; the respiration, at first altered and irregular, becomes regular, and so soft that it is often scarcely perceptible: this is a very characteristic sign. The eyelids are almost always closed; if we separate them, the eye is bright, but the pupil does not contract, even before a bright light; the sensibility is obtuse, but not extinguished; if we pinch a part, by a kind of automatic movement it is removed. In a few words, then, the characteristic signs are these: the patient lies in the way he is placed, he seems in a deep peaceful sleep; the thoracic parietes scarcely move; the surface of the body is pale, and for a certain time cold; the eyelids are paralysed; the pupil is insensible. The patient swallows, but deglutition does not happen, unless fluids be introduced far back; otherwise they remain in the month. Motion of the heart is scarcely perceptible; the pulse is so weak and soft as to be extinguished by the slightest pressure, but it is regular; digestion does not go on, neither do the excretions. If you pinch the patient he does not seem to perceive a first or even a second, and it must be severe to induce him to move the part; rarely does he direct his hand to the spot. These things are very marked at first, but gradually lessen;

the pinched part is sooner removed; the pulse is stronger and more frequent; the pupil is fatigued by light, even when the eyelids are closed, and the patient will sometimes interpose his hand between the eye and the light; speech returns; the wants are satisfied; he asks for food, and falls asleep, sometimes for many hours; after a time the intellectual faculties reappear, but he is incapable of sustained attention; he often begins a sentence and does not end it. After four, five, or six days, the faculties may be restored, but the consequences frequently continue for some time after; such as feebleness, incapacity to read, or to continue a conversation, or to think; the sexual functions sometimes seem debilitated for many weeks, and give the patient much disquiet. In a *third degree* almost all patients die promptly; they fall down insensibly, and all intellectual and voluntary functions are totally destroyed; there are often convulsive movements and involuntary evacuations; the pulse is very irregular; respiration is gradually extinguished, and after a few seconds life ceases.

Examined after death, we do not find, in the brain, any trace of extravasation, compression, or disorganization. If in patients who had died of apoplexy we open the cranium, we see that the cranium is completely filled; in concussion, on the contrary, the brain appears diminished, occupies less space, and contains less blood. Whether we examine with the eye alone or with a lens, we perceive no trace of separation, destruction, or confusion.

Treatment.—In cases of concussion of the brain, our first care should be to produce re-action, to rouse the dormant vitality of the contused and enfeebled organ; our second, to take all prudent means to prevent the development of inflammatory action; our third, to combat it when it is declared. To accomplish the first indications, warmth is applied to the surface of the body; warm diluent fluids may be given internally; but in some cases it is necessary to go farther, to exhibit diffusible stimuli, and to apply counter-irritants; mustard plasters or blisters to the legs or feet, the back of the neck, or even the previously shaved scalp. In a single case, which resisted all these means, I succeeded in rousing the patient by placing the feet in water of the temperature of 180. I have had no experience of the value of tartar emetic at this stage, and my impressions are unfavourable, although it has been strongly recommended. It is believed to act as a stimulant, which may, sympathetically, exercise a salutary action on the brain; and not as an evacuant, which would only increase the prostration; still less as an emetic, the

effects of which might naturally be expected to favour cerebral congestion. I repeat, I have had no opportunity of testing this remedy, and, theoretically, I am opposed to it. When reaction comes on, another set of agents must be brought into play. When sense returns, and the pulse is raised, if it become hard and quick, if the temperature of the body be much raised, congestion, and even inflammation of the brain, are to be apprehended: we must then bleed, but with the caution which the enfeebled state of an important organ would suggest. Bleeding is not, in many cases, so evidently useful as was once thought; the prostration and stupor may contra-indicate it. Indeed, until the stupor is partly or completely dissipated by coming reaction, we do not usually bleed. Then the suffused countenance, the injected conjunctiva, the full and hard pulse, point out the necessity. Some persons prefer to take blood from the temporal artery; others, from the jugular vein; others, from the foot; but I have never seen more good attend the taking blood from either of these parts than from the arm. With blood-letting we may associate the use of tartar emetic; not, however, until a certain quantity of reaction comes on. Many persons believe that the irritation it excites in the digestive tube serves to lessen the chance of inflammation of the brain. Desault, towards the end of his life, had so generally employed this medicine, that, even in cases of compression, he abandoned the use of the trepan, and maintained that the antimony rendered it unnecessary. He, at one time, largely employed blisters upon the head, thinking that they exercised a salutary revulsion. He conceived the communication between the soft parts covering the cranium, and the membranes covering the brain, so direct and so intimate, that irritation within might be easily subdued by irritation excited without the cranium; but then it must be recollected that this reciprocal correspondence may convey to the meninges, and even to the brain itself, irritation set up on the scalp. If used when the patient has not recovered from his stupor, they should be associated with evacuants. If the pulse be small and feeble, the insensibility almost complete, the coma deep, it is by some thought necessary, after having shaved the head, to completely cover it with a large blister, which should remain applied for twenty-four hours. In some cases its good effects are very quickly manifested; agitation is developed, the pulse is raised, the face is animated, consciousness returns, and the patient seems as if to awake from a long deep sleep. They also advise that the irritation should be kept up by removing the epidermis,

and dressing the surface with mercurial or savine ointment. My own experience is more favourable to the use of blisters to the calves of the leg or soles of the feet.

The effects of concussion may be slow and insensible. Vessels may be ruptured within the cranium, or the brain or its membranes may be inflamed. The following case shews what accidents may follow slight concussion, and what a long interval may occur between the cause and the effect:—A bundle of hay, thrown from the window of a loft, fell on the head of a young man who was passing: he fell to the ground insensible; there was no wound, or appearance of contusion. Three bleedings so far restored him, that, on the fifth day, he was up and about his ordinary occupations. Three months after he became heavy and sleepy; he was unable to exert himself, and perspired profusely after very slight labour; his pulse was frequent, his appetite capricious. It was observed that during the night he ground his teeth, and that, though asleep, his eyes were often open. A medical man who saw him, knowing nothing of the accident, thought he had worms, and treated him accordingly, without success. He died of convulsions without having passed any worms. He was examined after death, and, in the middle of the medullary substance of one hemisphere of the brain, three or four table-spoonfuls of very fetid decomposed blood were found. In these internal extravasations, results of concussion, the signs which indicate their existence are not sufficiently positive or precise to justify our having recourse to the trepan. The evacuant system is the only one which can be followed. By means of such treatment as we have directed, the patient's condition may be greatly improved; but it is still necessary for some time to watch him very carefully. If any partial paralysis exists, tonics and stimulants will sometimes relieve it; sometimes blisters and electricity exercise over it a salutary influence.

To prevent the development of chronic inflammation of the brain, which occasionally supervenes some time after the accident, the patient must be rigidly dieted—must not engage in any laborious mental or bodily occupation; he should continue saline-antimonial purgatives; the digestive system and the head must be especially watched. If there be pain or confusion in the head, cold should be applied, and, in some cases, it becomes necessary to use blisters or even issues at the back of the neck; and, if necessary, blood-letting. In spite, however, of the best directed means, bleeding, blistering, and evacuants, inflammation is sometimes developed in the substance of the brain, or in its membrane, and is

usually manifested about the sixth, seventh, or eighth day from the occurrence of the accident.

COMPRESSION OF THE BRAIN.

Observation and experience have shewn that compression, exercised on the periphery of the hemispheres of the brain, when inconsiderable, often produces little effect, though occasionally a few drops of blood or pus seem to be sufficient to destroy life; that when it acts upon the base of the brain it destroys the senses, and suspends the intellectual faculties, and voluntary motion; that when compression is limited to particular points, the effects are varied; but experience has shewn so many exceptions to these rules, that it behoves us always to regard these cases with great suspicion. Not many weeks ago, I saw a case where a man was struck on the left parietal region with the edge of a flat iron; an incision, without any depression of the outer table, resulted. This man went to his work, as a plumber's labourer, next day, and continued to attend to his business for ten days: he was not well, certainly, but still sufficiently so to do what was required of him. He then took to his bed, continued there for ten days, and died. Thirty-six hours before his death I saw him; the pupils acted, he could readily move his arms and legs, and there was not even partial paralysis; and yet the man had, at that time, a piece of the inner table two inches long, and half an inch wide, driven into the brain, and five or six ounces of very foetid pus on the left hemisphere.

If, in a brute animal, we expose the brain, and place upon it a dry sponge, no marked effect follows it; but if we fill the sponge with water, the animal staggers; if, to the weight of the sponge, we add pressure with the finger, paralysis is manifested.

When the cranium is not opened, any substance interposed between it and the brain gives rise to more decided symptoms, because compression is then more completely exercised; and this is an argument used by the advocates for the trepan.

The effects of compression vary with the extent of surface compressed; the greater the extent, the more serious the condition, and the more difficult the relief; but compression, very limited in extent, may prove as rapidly mortal when it acts upon the base of the brain: thus counter-fractures of the base of the cranium are commonly fatal through the pressure of extravasation. It is, therefore, proper to endeavour to determine the seat of compression. As a general rule it may be said, that the nearer the vertex the less

severe the accident; less important parts of the brain are affected, and more opportunity of relief is afforded. The compression may be exercised external or internal to the dura mater or pia mater, and, in this respect, the situation has much influence on its gravity; for the deeper-seated the compression, the more direct its influence upon life, and the less probable is extraction or evacuation. Again, the nature of the compressing body is important; does it come from without, is it solid, is it smooth, is it blood, is it healthy pus? These different bodies will compress differently, and will give rise to different symptoms. It seems to be a well-established fact, that a spicula of bone, or the point of a sword, or knife, will more readily excite inflammatory action than a bullet. Extraction is as much more pressing as the body is more irritating. Blood is more easily supported than probably any other body, and there is more chance of its being absorbed. Again, there is a difference between coagulated and fluid blood; the former compresses more; therefore it is that the wound of an artery produces more rapidly the symptoms of compression than a similar wound of a vein or sinus; arterial blood soon coagulates; venous blood often remains for a long time fluid. Sanies and pus have a doubly fatal influence; they act as compressing bodies and irritating substances. The mode in which compression is applied is an important circumstance, whether suddenly or slowly: it is sudden when caused by bodies introduced from without, or by spiculæ of bone; it is less so when produced by blood; still less when caused by a morbid product. Sudden compression the brain cannot bear with impunity; its effects are almost instantaneously manifested, even though the amount be inconsiderable; whilst the brain may get accustomed to compression slowly produced, even though considerable. It might from this be concluded, that the latter is a less formidable condition than the former; but if we attentively examine the sources of the latter, we see that they proceed, commonly, from a lesion of the brain, or its membranes, and that the patient's condition is singularly aggravated by this circumstance. When the compression is caused by a foreign body or spicula of bone, its extraction may at once restore the functions of the injured part, while when it is produced by a morbid product, we scarcely hope for prompt or certain relief. Extravasation of blood, though occurring slowly, determines a compression which is more serious than that determined by a depressed bone, which acts suddenly; because we cannot calculate confidently on its being absorbed, and because we cannot be sure, even if we

apply the trepan, that we shall succeed in removing it; whilst a depressed bone can almost always be raised. Almost all the causes of compression of which we have spoken, may exist concurrently in a given case, and this seriously complicates the disease: we may have a foreign body, driving in *inspiculæ* of bone, and penetrating itself; a blood-vessel may be ruptured, blood effused, and pus secreted.

The most important point in these cases is the condition of the brain itself. When, with compression, there is no decided lesion of the brain or its membranes, the affection is simple; but if there be inflammation, or contusion, or violent concussion, the case is complicated, and even the trepan fails; and this is as easily understood as that the operation for empyema should often fail. The operation for empyema will often succeed, when all that is required of it, is to remove the contained fluid; but most frequently there is a disease of a contained organ, and the condition is reproduced. To open the cranium or the chest is not of itself an essentially grave operation, if the contained organs preserve their integrity. It would oftener succeed if cases for its employment were better chosen, and the operation performed at an earlier period.

We have already stated that a certain analogy exists between concussion and compression, since in both cases the brain is subjected to a physical action, which tends to compress it; but in the first case there is an impulsion or shock, the brain is hurt against the cranium, whilst in true compression there is no general shock. The symptoms fairly express the analogies and the differences of these two states. The most marked symptom of compression is paralysis, arriving sooner or later after the accident: the time, varying with the agent, according as it is blood, pus, or other substance. The symptoms may be manifested intensely; at the moment then they resemble those of apoplexy; there is a lethargic prostration; respiration is difficult or stertorous; there is hemiplegia, or only paralysis of a particular part; convulsive movements; hard and frequent pulse. Some authors have observed a contrary condition: Thomson speaks of a case of fracture, with a depression of the posterior part of the cranium, in which the pulsation suddenly declined to 36. Abernethy also noticed that the pulse was sometimes slow, and that it more frequently intermitted than in cases of concussion: sometimes there is dilatation, sometimes contraction of the pupil. I believe the condition of the pupil at the moment of injury has much to do with its after appearance. The symptoms succeed rapidly, or almost simultaneously,

when there is a sudden compression of the brain and nerves; but when the compression is slow and progressive, the symptoms make their appearance gradually, and after more or less considerable spaces of time. The patient may feel general numbness and heaviness, which materially interfere with voluntary motion; the senses are blunted; the head is heavy, and the hand is frequently directed to it; from time to time he is roused, but soon relapses; the lethargy increases; the breathing is stertorous; delirium comes on; convulsive action is frequent, and paralysis extends.

A great and very natural desire has always been felt to acquire the power of determining the seat of compression, and for this purpose the seat of paralysis has been much, relied on as a means of deciding upon the point where the trepan should be applied. The observations of the ancients have suggested to the moderns ingenious experiments to set at rest this question. Among the investigators (by way of experiment) of this subject, the principal are, Magendie, Serres, Fleurens, Bonillaud. Cleverly as their experiments were conceived, and dexterously as they were executed, they have done little for surgery, but have brought new facts to physiology. The ancients were not ignorant that the compressing agent is usually found at the opposite side to that of the paralysis; but facts often occur in which the rule does not hold good. As a general rule the seat of paralysis indicates that the seat of compression is on the opposite side; but as each side of the cranium is a region of considerable extent, attempts have not been wanting to fix more immediately the compressed point. For this purpose the paralysis is an insufficient guide, and direct examination of the cranium is useful. When with a paralysis of one side of the body an injury of the cranium exists on the other, we are justified in concluding that the compressing agent is seated under this point: if it be a simple contusion, the probability is great; if the bone be denuded, the probability increases; if there be a fracture, certainty is almost complete. Attempts have not been wanting to prove that we may acquire still more precision as to the seat of injury; but they cannot be relied on: it has been stated that if there be lesion of the optic thalami and corpora striata, that they are respectively indicated by the affections of the arms and legs. Such are the primary lesions of the cranium, which indicate the existence of a neighbouring compression: there are consecutive lesions which afford quite as much certainty; thus, when, before or with paralysis, there is separation of the pericranium, when the wound becomes pale and flabby, and yields a sanious or fetid discharge, we are justifi-

fied in acting upon the conviction that there is effusion under this point, within or without the dura mater. When there is no wound, if, with paralysis, a puffy tumor is manifested, such as is seen over a necrosed bone, we are justified in presuming that *there* is the seat of pressure. In fact this tumor is similar to that which occurs over a bone in the limbs, whose medullary membrane is diseased. Now the dura mater may very fairly be considered as the medullary membrane of the cranium; if it be separated the circulation in the bone is, to a certain extent, compromised, and the pericranium also; therefore the tumor is analogous to those manifested in the limbs under parallel circumstances.

Again, many persons are sanguine that they have not only the power of distinguishing, in all cases, between compression and concussion—that they can point out the seat of compression—but that they can determine by what kind of body it is produced. They say, if the signs of compression are produced at the moment of injury, it must be occasioned by a depressed bone; that if they gradually come on within forty-eight hours, it must be caused by extravasation of blood; that if they begin to be manifested after the third day, the chances are that they are occasioned by pus. If injuries of this kind were simple, uncomplicated, in many cases these circumstances would be important diagnostic signs; but as the simple cases are very few, we must not look for very important results from these signs. Supposing, for instance, a case of severe concussion: for hours the ordinary signs of compression may be present: before they have ceased hemorrhage has proceeded to a certain extent, and real compression is produced: how can we determine, in such a case, whether the compressing agent be blood or bone? Supposing the symptoms of compression not to be developed until after the fourth or fifth day, how can we distinguish between inflammation of the brain and local purulent secretion?

We have said that concussion was a species of compression; that the two conditions were analogous: they ought therefore to be represented by symptoms bearing a certain analogy with each other; and so they are; so completely, indeed, that before the time of Petit they were usually confounded. The brain being compressed in both cases, symptoms in both are manifested which indicate an enfeebled innervation. The intelligence, the senses, and even the functions of animal life, are suspended. Still, though these two conditions offer those points of similarity, it is of vital importance to you that I should enable you to distinguish between them.

Mr. Abernethy terminated his comparison of the symptoms produced by concus-

sion with those of compression, by stating that *compression* insensibly determined partial or general insensibility, according to the degree of extravasation. The pupil is dilated and immovable, the respiration slow and stertorous, the pulse slow, there is no vomiting, the limbs are flaccid, as in a dead person.

In *concussion* the insensibility is of short duration, and while it lasts the extremities are cold, the pulse is feeble and intermittent, the skin gradually becomes warmer, the pulse and respiration more frequent. Often the pulse is intermittent, but the breathing is never stertorous; the pupil is contracted, the countenance expresses suffering, there is often vomiting, and the state of the patient is like that of one in a deep sleep.

We must go farther: we must show you that the exceptions to the conditions above described as characteristic of concussion and compression are very many, and very complex. We will take the first two degrees of concussion; and in speaking of compression I shall exclude those produced by manifest depression of the cranium, or by foreign bodies: they may excite symptoms as promptly as concussion, but the external signs are so evident that they cannot be confounded.

We have seen that concussion was a momentary compression; its effects should therefore be prompt, and directed upon the whole economy; there is a great incapacity for action, because innervation is generally suspended.

The cause of concussion strikes a single blow. The effects remain, and they are most violently expressed at the moment; they are afterwards gradually lessened.

Concussion is a deep heavy sleep, which prostrates at a single blow, gradually becomes lighter, and ultimately vanishes, carrying with it the remembrance of the cause. It happens that patients, in recovering consciousness, totally forget the accident. In concussion the causes of the sleep no longer exist, nothing is opposed to waking, nothing weighs down the eyelids; they open of themselves.

Compression is established by degrees, and does not act upon the whole of the brain, and its effects are not manifested for some time after the accident. The absence of innervation exists in the part which corresponds to the point of the brain which is compressed.

The cause of compression acts slowly, and goes on increasing; when it does not increase it remains stationary; its effects follow the same course. They are at first little marked, but usually they soon increase. If the compression be extensive, it is at first a slight stupor, a fitful sleep, becoming afterwards as deep as that at the commence-

ment of concussion; but it is less soft and peaceful, there is always more or less agitation, there are efforts to rouse himself, but they may be ineffectual, because compression weighs the faculties down.

I have chosen as my illustrations a case of concussion without contusion of the brain, and a case of the simplest compression, that from extravasated blood.

If the characters of concussion and compression were always shewn as we have represented, if their features were all as clearly defined and as prominent as we have here described, no difficulty could be experienced in distinguishing them; but though our descriptions are truthful they do not tell the whole truth; and therefore it is particularly important to point out, and to direct attention to, another circumstance—the interval which separates concussion from compression, and to establish that when insensibility supervenes immediately after the accident, it is owing to concussion, whilst, when it comes on some time after, or after the symptoms of concussion have disappeared, it should be imputed to compression. But does this interval which separates concussion always exist? Is there always the intermediate period in which there is a cessation of the cerebral symptoms? Certainly not: it may happen that the effects are hardly completely manifested when those of compression begin: they are then combined and confounded. In such a case the progress of the symptoms should be attentively considered; if they persist with the same degree of intensity, and especially if they are aggravated, there is strong ground for presuming that compression exists. Concussion, it is true, does not always disappear without return. We may see patients rouse themselves from the sleep we have described, and again fall into it, and for a long time preserve that kind of torpor or numbness of the faculties which we have spoken of. Now this state might be confounded with compression; but if we carefully examine the case, we shall soon be sensible that the second sleep is much lighter than the first, and if it be repeated a third or a fourth time, it is less and less heavy; whilst in compression an opposite course is always observed.

Still there are exceptions: the oscillations of the brain in concussion are not always limited to enfeebling it; material injuries of its substance are occasionally produced, and a peculiar form of concussion is then presented, which may be termed *cerebral contusion*. It may occur directly at the point where the blow was struck, or a diametrically opposite point. It may present a simple ecchymosis, or have proceeded so far as to reduce the brain, at the point, to a reddish pulp. When concussion is joined to one of these de-

grees of contusion, more or less violent reaction occurs, and most commonly a fatal inflammation follows. Dupuytren thought that contusion of the brain was marked by particular symptoms: by violent contraction of the limbs, by continual agitation, by unconsciousness, but without stertorous breathing; that in the slightest cases there were contracted pupil, spasmodic twitching of the lips, difficulty in expressing certain words. If the contusion exist alone, these characters may materially assist in diagnosis, but it almost always is associated with concussion, and sometimes with compression.

Simple compression is more rare than concussion with contusion, because extravasated blood supposes rupture of vessels. There is therefore in compression a certain degree of contusion. What proves that compression is not simple, are the signs of nervous excitement which so constantly coincide with paralysis. It is even probable that in many, perhaps in most cases, the symptoms which we consider as effects of compression are owing to a certain degree of inflammation of the brain, or its meninges. This is especially the case when the extravasation has existed for some days. Even supposing the extravasation to be of blood, it almost always acts like a foreign body, and irritates the brain; at a later period this blood is more or less decomposed, and then is not only a mechanical but a deleterious irritant.

Prognosis.—The prognosis of compression, depends upon its degree, its causes, its complications, and the constitution of the patient. As to compression consequent upon depressed bone, it is, altogether, the most manageable; that occurring in young persons, and consequent upon extravasation, when inconsiderable, is occasionally absorbed; extravasation of blood at the base, or in the substance of the brain, is usually mortal. When to the phenomena of compression are added inflammation or its products, the prognosis is very serious.

The *treatment* of compression consists in removing the cause, if possible, and preventing inflammation. When the cause is a depressed bone, it must be raised, and, if necessary, removed; this can occasionally be done with an elevator; sometimes a Hey's saw may be necessary; sometimes an elevator and a trepan are required. If the cause of compression be within the cranium, it may be blood or pus. Extravasated blood may disappear either by absorption or the trepan, but it is probable that pus never does. We may take means to favour absorption when the symptoms are not pressing, when they do not increase, and when it is impossible to diagnosticate with any certainty the seat of the extravasation. The means which

should be employed for the purpose are repeated blood-letting, counter-irritants, evacuates, such as we recommended in speaking of concussion, and cold. It is the only course applicable to such cases, and to those in which we have reason to conclude that the extravasation is into the substance of the brain. The trepan is only indicated when the extravasation exists between the dura mater and the skull; but are these cases of frequent occurrence? I apprehend not. And certainly in many cases the blood shed, in these injuries, might, and in some cases it does, escape through the fracture. When the symptoms of compression are urgent, and when there is upon any point of the cranium a wound or a contusion, pain or tumefaction, we may make an incision; if we find the pericranium detached, or only slightly adherent, the trepan should be immediately applied to the part. Frequently the patient feels pains, which set out from the point where the extravasation is found. As I have already stated, experience has not invariably demonstrated that the extravasation is on the opposite side to the paralysis, though, as a general rule, it applies; neither has it demonstrated that paralysis of a certain part is a certain sign that extravasation exists at one part of the brain rather than another. When a crown of the trepan has been applied without having met with an extravasation, the symptoms being pressing, we should apply a second where another contusion exists, and in the absence of that we must be guided by any other circumstance which can serve as a probable guide. If the extravasation is seated immediately under the cranium, the fluid may escape as soon as the perforation by the trepan is accomplished; but you must not mistake for the fluid of an extravasation the blood which flows from the diploë. When the dura mater is tense, of a violet colour, and presents evident fluctuation, a crucial incision should be carefully made. If the extravasated fluid be seated below the pia mater, it is equally necessary to give it an opportunity of escape. If we do not meet with it we must content ourselves with the general means, which we have already indicated. What I have said of the complications of compression is directed against the improper use of the trepan; now if the cerebral symptoms are owing to any other cause, for instance to inflammation, the trepan cannot, I apprehend, remove it, and must therefore be injurious. I know that there are surgeons who regard the trepan as an antiphlogistic—an anti-apoplectic—that is to say, who have proposed it in encephalitis, as we employ incision in certain tissues, to relieve the strangulating effects of certain

varieties of inflammation, with a view of allowing the brain to expand; and in apoplexy to seek for the clot and extract it; but I do not think that a well-regulated surgeon would think it necessary to occupy himself long with this idea, still less to carry it into practice.

CASE OF EMPYEMA WITH PNEUMOTHORAX.

To the Editor of the Medical Gazette.

SIR,

If you consider the following notes sufficiently interesting, be pleased to give them a place in your valuable GAZETTE, and favour

Your most obedient servant,
J. B. THOMSON.

Tillicoultry, August 3, 1840.

A. C., ætat. 18, came under my care in the month of June, 1838, when he was suffering from a smart attack of pleuritis. He was of a florid complexion, and strumous diathesis. The pleuritic attack was soon subdued, and in order to recruit his health he went to reside with a friend on the sea-coast, where he had another and more violent inflammatory attack, which was followed by serious results. It was the month of October when I saw him again, and he presented the following symptoms:—Considerable emaciation; hard cough, with white viscid expectoration, tinged with blood; some dyspnœa; right side of the chest enlarged; dulness on percussion in the lower part of that side; when patient shakes himself there is a distinct sound of fluctuation on right side, similar to that produced by shaking a half-filled bottle of water: he can only lie on the right side. It was now evident that there was empyema and pneumothorax in the right side; the sound of fluctuation was distinct, and from the dulness on percussion in the lower part of that side, the clear sound above, and the absence of respiratory murmur in both, there could be no doubt that there was a communication between the cells of the lungs and the sac of the pleura on that side.

The treatment adopted for this case was in a great measure palliative. Local bleeding, and repeated blistering of the right side, digitalis, light bitters,

with sulph. acid., light and nourishing diet, and rigid cautions against exertion, cold, excess, or irregularity, were particularly attended to. These means were enforced with occasional variation, *pro re nata*, during some months, but without any benefit; on the contrary, the constitution rather gave way.

In the beginning of January, 1839, I resolved to give a trial to the hydriodate of potass, and as this was the only medicine followed with any good effects, the result merits attention. It was administered in the form of solution, to the amount of three grains three times a day. Within a month from the date of commencement, I was surprised to find a singular change had taken place since my last visit, which was two or three days ago.

Jan. 31st, 1839.—The pneumothorax was gone; the air, which was certainly contained in the right side of the chest, had disappeared. Patient can lie upon either side, which he has not been able to do for the last four months and upwards; the sound of fluctuation, when shaken, is not heard; the general health is decidedly improving, and the pulse more firm. These more favourable symptoms continued for nearly nine months.

June 1839.—At this time there occurred at intervals copious and bloody expectoration, which was relieved by acet. plumbi and tart. ant. with morphia in small doses; but which at intervals occurred occasionally during the whole history of the case.

January 1840.—A return of the pneumothorax discovered in the beginning of this month, attended with aggravation of all the symptoms. Pulse 120, feeble; emaciation increasing rapidly; occasional copious expectoration of tough mucus tinged with blood; inability to lie on the affected side; some hectic; no sweatings.

These symptoms slowly but seriously increased in severity, with occasional intermissions, and my patient gradually sank, and died on the 6th of May. It is matter of regret that no post-mortem inspection could be procured.

REMARKS.—The foregoing seems to be an example of a collection of matter in the thoracic cavity spreading from without, which is the more rare history of the disease. Empyema is generally an effect of ulceration of the lungs in the course of phthisis spreading outwardly; but in this case we have re-

peated attacks of pleuritis followed by ulceration of the pleura, extending inwardly to the lungs. There was little or no appearance of phthisis, and the dry and unperspirable state of the skin, so different from phthisis, was very remarkable during the whole history of the case I have just narrated. Indeed, I believe the absence of night sweats, except in the latest stage of empyema, is one of the most marked symptoms of the disease.

The only part of the treatment to which I request particular attention is the administration of the hydriodas potassæ. Was the disappearance of the pneumothorax at this stage of the complaint the result of this medicine? Whether it was *post hoc* or *propter hoc* I leave for further experience to determine. During the progress of the case the patient was repeatedly seen by Dr. Alison, and received his valuable advice. With reference to an operation, this accomplished and experienced physician says, "From all that I have seen of such cases, I cannot recommend paracentesis of the thorax. I have seen the same thing repeatedly terminate quite favourably, sometimes by absorption of the fluid; sometimes by its making its way through the lungs; in a few cases, by making its way outwardly; and from all that I have seen I think the prospect is better without than with the operation of paracentesis, at least at his age."

PUERPERAL CONVULSIONS.

To the Editor of the Medical Gazette.

SIR,

As the following case of puerperal convulsions, which occurred to me whilst assisting in the practice of Mr. Wood, may prove interesting to some of your numerous readers, I have taken the liberty of forwarding it for insertion in your valuable journal.—I remain,

Your obedient servant,

HENRY CHAMBERS.

Ledbury Dispensary,
Aug. 7, 1840.

October the 6th, 1839, I was summoned about six o'clock p. m. to attend Sarah Thomas, æt. 21, residing at Little Marele, then in labour with her first child. She was a stout, florid, robust

woman, of strong muscular fibre, thick-set form, and short neck; such an one, indeed, as might be considered predisposed for apoplexy. Upon my arrival I found that she had had one or two convulsive attacks, and was then labouring under another. Her countenance had assumed a most hideous appearance, the face being turgid, livid, and swollen; breathing hurried and irregular; pulse remaining at no settled standard, varying much, alternately full and slow. Her head was thrown considerably back; the superior and inferior extremities were at times firmly set, at intervals relaxed, being tossed about in almost every direction. As soon as the paroxysm had in a great measure subsided, I readily availed myself of that powerful auxiliary, the lancet; and with "*neque timide, neque temere*" in mind, drew from a large orifice in the arm from xxxx. to xxxv. of blood, with a decidedly beneficial effect, as she received considerable relief, only complaining of slight pain and some fulness in the head. Upon making an examination per vaginam, I found that the membranes were ruptured, and os tincæ dilated to about the size of half a crown, yet still so rigid as to preclude the possibility of either the forceps being applied or the hand introduced, to finish the case by turning. The head was presenting in the first position, the face being in the hollow of the sacrum, the occiput opposed to the pubis. She remained perfectly tranquil and free from any other attack for about four or five hours; the labour proceeding favourably, at the same time very slowly, the uterine contractions being weak and ineffectual. Between twelve and one o'clock she had a slight convulsive attack, which lasted but for a short time; another quickly succeeded, followed by others still more lengthy and alarming. A second time I had recourse to the lancet, and abstracted about xxx. or more of blood, but, in this instance, without any apparent good effect. Her hair was entirely cut off, and cold water applied to the head. Affairs beginning to assume a more serious aspect, and finding that the only possibility of saving her life depended upon immediate delivery by aid of instruments, I sent for Mr. Wood, who speedily arrived, bringing them with him. That latter gentleman promptly decided upon using the forceps, but the attempt was rendered difficult, and

in no small degree hazardous, from the violent struggles of the patient, who, during the whole time of their application, was in convulsions, the continued effort of four assistants being unable effectually to hold her. This difficulty was still more augmented by the fact of the head being placed very high up within the pelvic cavity: the os tincæ, though dilated, was still sufficiently so to admit of the use of the forceps, but "*nec posse vehement malo, nisi aque vehemens auxilium succurrere.*" The forceps, after being applied and firmly locked, in two instances, upon moderate traction being employed entirely slipped from their hold, without in the least advancing the head, a circumstance which, in no one instance, I ever saw before occur, (nor, indeed, had Mr. W.,) and one for which I am unable to account, unless there might be some narrowing in the pelvis, which I think was probably the case. From this occurrence they were rendered ineffectual, and we were compelled to have recourse to the only alternative that presented itself, viz., craniotomy. This operation was rendered less painful to contemplate, feeling assured, from the length and nature of the attack, that the child was dead. Indeed, had such not been the case, that well-known axiom in obstetric practice fully warranted the operation, as in a very short time the woman, had she not been delivered, must have sunk. Less difficulty was experienced in using these latter instruments than the former; the perforator readily entered the head, and the greater part of the parietal bones were soon extracted: this done, some little difficulty was experienced in the passing of the shoulders, (probably from, as I before hinted, a narrowing of the pelvis); ultimately delivery was accomplished about four o'clock, A. M. on the Monday. By gentle pressure over the uterus, that organ was incited to expel the placenta, less hæmorrhage occurring than might have been expected. As soon as delivery was accomplished the convulsions ceased, the woman remaining in a state of insensibility, from which she did not recover for ten or twelve hours, and when reason had resumed her empire was quite oblivious as to the past, scarcely crediting that she had so easily become a mother. It were foreign in this instance to particularize her subsequent treatment, or the nature of our visits, as nothing further of interest oc-

curred: no unpleasant symptoms followed, gradually she became convalescent, and now happily is restored to her sound health.

OPERATION FOR SOLUTION OF CATARACT.

To the Editor of the Medical Gazette.

SIR,

THE perusal of Mr. Middlemore's paper in your last number but one, "On the Treatment of certain Injuries of the Eye occurring in Infants and Young Persons," in conjunction with a case lately treated by me, which perfectly confirms the opinion of this gentleman, induces me to offer a few remarks as regards the operation for solution of cataract, as performed by Professor Jüngken of Berlin, and by myself.

Mr. Middlemore observes, "that in performing either the anterior or posterior operation of solution, we are very properly directed to destroy the anterior capsule to an extent at least equal to the size of the natural pupil; but that this important direction is by no means sufficiently attended to." In confirmation of this statement, I will first relate the case above alluded to.

A few weeks since Dr. Swaine placed under my care a young gentleman, aged 17, who had been the subject of congenital cataract, for which he had been three times operated upon within the first six years of his life. The right eye had collapsed after the second operation, in consequence of a severe iritis. In the left eye, when first examined by me, the whole of the anterior wall of the capsule was entire, presenting merely a perpendicular division, about one-sixth of an inch in length, situated so far from the centre of the pupil towards the inner angle of the eye, that only when the pupil was dilated by a strong light, this opening was seen just behind, and corresponded with the nasal margin of the pupil. The capsule itself was thickened in texture, very tough, inferiorly adherent to the uvea, and the whole resembling mother-of-pearl in appearance. This state of the capsule necessarily impaired vision to such an extent, that he could distinguish but little more than light from darkness. Under these circumstances the operation of extraction was indicated, and accordingly performed

by me in the presence of Dr. Swaine. After the separation of the capsule from the uvea, and its extraction, a large portion of the lens, probably the nucleus, presented itself in the pupil, the removal of which was readily effected, and left the pupil now perfectly clear and black. Had the first operation in this case been effectually performed, the three subsequent operations would at once have been prevented, and therefore "the necessity," as Mr. Middlemore states, "of making a free laceration and extensive comminution of the anterior hemisphere of the capsule at a first operation," is so evident, as to become a rule never to be deviated from.

The best method of following this indication, and attaining the end desired, is, in my opinion, a modification in the operation for solution, which I have seen adopted with great success by Professor Jüngken, and which I have not met with in any of the numerous writings on ophthalmic surgery in the English language, and therefore think worthy of submitting to the profession. After passing the needle either through the cornea or sclerotica, Professor Jüngken divides the anterior wall of the capsule in its whole diameter, in four different directions, through its centre. By these means eight flaps are formed, which soon retract behind the iris, and thus leave the pupil perfectly clear. The lens is now divided in different directions, more or less according to its consistence. A few smaller pieces of the lens are brought into the anterior chamber, and the nucleus, or one or two larger pieces, are pressed backwards into the vitreous body through the centre of the posterior hemisphere of the capsule, which is partly destroyed. The needle is now withdrawn from the eye. This method insures the entire removal of lens and capsule from the pupil, and as the smaller pieces of the lens in the chambers of the eye are soon absorbed, a cure is more readily accomplished.

I have again modified this operation, and perhaps improved upon it; for as in pressing the nucleus of the lens into the vitreous body through the centre of the posterior capsule this latter is not entirely destroyed, and the ramifications of the arteria centralis in the posterior capsule are greatly injured, which lesion might have for its consequence an opacity in the centre of the capsule, I prefer pressing the nucleus not through the

centre of the capsule, but through a point somewhat nearer to its periphery. On this principle I have already operated, and in lacerating the capsule out of the axis of vision, and in offering less injury to the small branches of the artery, all possibility is removed of an opacity following, which might interfere with sight.—I remain, sir,

Your obedient servant,

AUG. FRANZ, M.D.

19, Golden Square, August 3, 1840.

MEDICAL REFORM.

To the Editor of the Medical Gazette.

SIR,

As there appears little probability of Mr. Warburton being able to bring forward his proposed measure for medical reform during the present session, the House having been counted out on the 28th ult., and as there is at present no specific plan before the public, will you allow me, through the medium of the *MEDICAL GAZETTE*, to state my ideas on this so-often reiterated subject, in order that, during the parliamentary recess, the members of the profession may not only compare my scheme with their own ideas, but be induced to explain to the several members of parliament with whom they may be acquainted the absolute necessity for the interference of the legislature—a fact of which I believe very few of them have any idea. It must be confessed that the subject is surrounded with difficulties; but let it be remembered that there are few difficulties but what may be surmounted by a steady and well-directed perseverance; and I feel confident that if the members of the medical profession would fully and fairly explain what they mean by reform, and, laying aside all petty jealousies, submit to the legislature a clear well-defined scheme, their wishes would not only meet a ready attention, but be cheerfully granted. But, in order to accomplish this, the two great governing bodies, or rather what ought to be the two great governing bodies, the two Royal Colleges of Physicians and Surgeons, must cordially go hand in hand.

It is of little use to ask parliament for medical reform without clearly specifying what are our grievances, and what regulations we wish to be enforced by law in order that those griev-

ances may be removed. The utmost that we can expect without such statement is the appointment of a committee to inquire into the condition of the medical profession. This committee was appointed some six or seven years ago, and what have they done? Accumulated, no doubt, at a vast expense of money, time, and labour, an immense mass of evidence—an almost incredible number of valuable but conflicting facts, which tend rather to embarrass than elucidate the question; and for the present there it rests.

Now, sir, in my opinion, the first questions to be asked are—what are the demands—what are the real and absolute wants of the public, in respect of medical attendants? and how are these wants supplied? The questions are easily answered; the public demand, and they ought doubtless to be supplied, with a sufficient number of duly qualified and legally authorized men, to treat the various diseases to which the human frame is liable. And are not the public so supplied? Most assuredly they are.

The next question is, are these qualified men effectually and legally protected from pretenders—unlawful intruders and interlopers of various descriptions? Most assuredly they are not. This, then, is the medical reform that is wanted—legal protection for the legally-authorized practitioner. At present he has none. Suppose, for instance, he is a physician who has regularly graduated at Oxford or Cambridge, and subsequently been admitted a member of the Royal College of Physicians in London, he fixes his residence in some large town, Bristol or Liverpool, perhaps; yet, after all his expensive education and preparation for practice, with all his University honours and degrees, of which he may justly be proud, he has no protection against an illiterate impostor, who, without any degree, license, or authority whatever, foists himself upon the public as a doctor of physic, and absolutely commences practice in his immediate neighbourhood. And why is this? Because, forsooth, the jurisdiction of the Royal College of Physicians extends but to London and its environs; and any one who thinks fit to assume the title may call himself an M.D., and practise as such in any other part of her Majesty's dominions, not only with impunity, but without any let or hindrance whatever.

With surgeons it is, if possible, worse. A young man, at a very great expense, attends the prescribed number of years to the various lectures, hospital practice, &c. &c., and in due season, being considered competent, presents himself at the College, and having passed the ordeal of a strict examination in anatomy, surgery, physiology, &c., obtains the College diploma; this is certainly a license to practise, but it is no protection, no, not even in London, against any adventurer who may think proper to call himself a surgeon, and practise as such — aye, even if such adventurer should fix his dwelling at the very next house to the President of the Royal College of Surgeons, and write his name as surgeon on the door, the President of the College has no redress whatever. But how is all this to be remedied? By proper laws, properly enforced.

In the first place, I would propose that the duty of examining candidates, and the privilege of conferring degrees, should be vested in a Committee or Board, formed by an equal number of fellows of the Royal College of Physicians, and members of the Council of the Royal College of Surgeons, as at present existing, and that no person should be allowed to practise in any part of her Majesty's dominions unless authorized by this Committee or Board.

Second.—Every person so authorized should be allowed to practise both branches of the profession (that is, medicine and surgery) indiscriminately, and be entitled to demand a sufficient fee or remuneration for his advice and assistance, but he should not be allowed to prepare or dispense any medicine, or to sell any drugs or chemicals, or to enter into partnership with any chemist, druggist, or apothecary.

Third.—No medicine should be prepared by any person but the apothecary, who should not be permitted to visit the sick or prescribe for them, or perform any surgical operation, or sell any drug or chemical preparation, or prepare any medicine but what was prescribed by the physician or surgeon; and such apothecary should be obliged to keep every article and compound specified in the Pharmacopœia of the London College, and he should retain the original prescriptions of the physicians and surgeons, in order that they may be afterwards produced if necessary; and these

prescriptions should each of them contain the name or title of the patient for whom they were written, the name or initials of the physician or surgeon prescribing, and the date of the month and year in which they were written; and the apothecary should be bound to prepare the medicines exactly as prescribed, without any alteration; and he should be allowed to make a sufficient charge for the medicines he so prepares.

Fourth.—No chemist or druggist, or any other person except the physician or surgeon, should be allowed to prescribe for the sick, or perform any surgical operation; neither should any chemist or druggist dispense any medicine, or sell any patent or quack medicines; but all chemists and druggists should confine themselves to their proper business of preparing chemicals and selling drugs.

Fifth.—No candidate should be admitted for examination as a medical or surgical practitioner, who has not attended the usual lectures and hospital practice, according to the regulations at present in force; and in order that all candidates may possess a competent knowledge of pharmacy, the apothecaries should be allowed to take pupils for the purpose of giving them proper instructions in their art.

Sixth.—The two Colleges of Physicians and Surgeons should be equally empowered to prosecute for the purpose of fining, or otherwise punishing, any person or persons practising or acting in defiance of, or contrary to, these regulations.

If these, or somewhat similar regulations, were enforced, I am persuaded that the medical profession would very speedily attain that respectability it ought to possess; but in order to render them efficient the alteration should be made immediately and simultaneously by all persons at present in practice.

Perhaps, sir, my second proposition may be considered objectionable, as blending the physician with the surgeon, to which I must reply by asking if they are not already blended in the practice of the most eminent surgeons in the world; and can any man tell me where the one ends and the other begins? Physic and surgery are so closely allied that they cannot be separated; they are like twin sisters, and should go hand in hand; few, if any diseases, however local in appearance,

but have some constitutional origin; even in accidents which have been considered purely surgical cases, constitutional derangement so constantly occurs that medical treatment not only becomes proper, but is absolutely necessary; and *vice versa*, cases deemed purely medical so frequently require surgical assistance, that the practitioner who confines himself to medical treatment alone will perpetually find himself at fault and obliged to send for surgical assistance. Imagine, for instance, a person attacked with apoplexy: a physician may prescribe, and very judiciously, but a surgeon must be summoned to bleed the patient, or the prescription will be of little avail. Again, are the various forms of syphilis medical or surgical cases? Does erysipelas belong to the physician or the surgeon? Scarcely a disease can be named that does not require the assistance of both. How much better, then, would it be, that the physician and surgeon should be combined in the same person? The various parts, the individual organs of the human body, although differing widely in structure, are all intimately connected with, and subservient to each other, and all concur in one common object, the subsistence of the individual.

No man can successfully practise either medicine or surgery who is not well versed in anatomy and physiology. Why, then, attempt to separate medicine from surgery, as though you could make them distinct sciences? Let a man take the degree of Doctor in Medicine, if he think fit so to do, but let him not be debarred from relieving his patient by a surgical operation, because he possesses this degree, which entitles him to the appellation of Doctor—a very vague and indecisive title after all. But do not mistake me; I do not affect to despise or undervalue titles and honorary distinctions. On the contrary, I consider them so essential, that I would rather increase than diminish their numbers; but I must repeat, this title Doctor, although not absolutely improper, is very indefinite, and, therefore, objectionable: for instance, I hear a man spoken of, or accosted, as Doctor such a one; but whether he be a doctor of divinity, a doctor of laws, a doctor of physic, or a doctor of music, I have no means of ascertaining, without asking the direct question, even if he be present;

for neither his dress, age, nor demeanour, contain any thing whereby he may be distinguished from other individuals. No; not even the highly accomplished scholar, who, after years of intense study and application, at length receives his degree of Doctor at either of our own “time-honoured” and still justly-celebrated Universities, can, by this title, Doctor, be distinguished from the impudent advertising quack, whose placards meet our eyes in every street, who boasts the boundless virtues of his trash, and chalks his name upon our cities’ walls. What a pity it is that the author of “The Doctor,” &c., has not noticed the subject; his powerful pen would, indeed, have done it justice. I have but given a sketch. He would have drawn a picture.

Let us now, sir, proceed to inquire what would be the effects of this great change in the medical profession, who would be benefited, and who would be aggrieved? And, first, as regards the public, surely they would have no cause to complain; they would still have their usual medical attendants; and the only difference they would perceive would be in the mode of remunerating him for his services. According to the present system, the general practitioner, as he is termed, is under the necessity of charging such a price for the medicines he sends, as will, in some degree, although very inadequately, recompense him for the exercise of his skill; but, according to the plan I am proposing, he would be paid for his attendance and advice, and the apothecary for the medicines supplied. This would at once put an end to cramming the patient with, to him, needless drugs, put up in the most expensive form, in order that the surgeon may be satisfied for his attendance and the exercise of his talent—*avile scheme*, which every liberal minded person, whether surgeon or patient, will, I should imagine, be thankful to get rid of.

Secondly.—With respect to the physician, how will he stand affected? He will, as heretofore, prescribe for his patient, and take his fee; nor can he justly consider his province encroached upon; on the contrary, it takes nothing from him, but permits him to act in the capacity of an operator whenever he may think proper; and, in addition to this, it gives him a legal power to recover

his fees, which at present he does not possess.

Thirdly.—The surgeon need not complain, since, as regards his practice, he remains exactly where he was, with the additional power of preventing any person from practising surgery who has not undergone a proper examination, and can prove himself legally authorized to practise.

Fourthly.—The apothecary would be exactly what the old apothecary used to be; the person to whom the physician and surgeon might look with confidence for the preparation of their various prescriptions: he would be, in short, precisely what he describes himself by his motto, "*Opiferque per orbem dicor.*"

Fifthly.—What is now called the general practitioner would be raised to that position he ought to occupy. Indeed, to give him this station, and to protect him from the invasions of the druggists, or other unqualified persons, is the principal intent of the scheme I have proposed. As to an equality in the profession, no man of common sense would harbour the idea for an instant. You may give men equal opportunities of attaining knowledge, but cannot give them equal capacities; as well might you attempt to reduce them all to one standard height, or one tint of complexion. We shall still have our Halfords, our Lathams, our Havilands, and our Babingtons, among physicians; and our Coopers, our Lawrences, and our Brodies, among surgeons, whatever laws are made, and whatever schemes are proposed.

Sixthly.—The chemist and druggist I have no doubt would growl at losing what he calls his "counter practice;" but as he has obtained this surreptitiously, I can only recommend him to attend to the old adage, "*Ne sutor ultra crepidam.*"

There is still one portion of the subject on which I have made no comment—I mean the attendance on the sick poor: hitherto I have purposely omitted them, not that I consider them of no consequence—far otherwise—I consider it a matter of such paramount importance, that if my present essay should happily find favour in your sight, I may at a future opportunity claim your indulgence for a paper expressly devoted to the subject of medical attendance on the poor. According to the scheme I have just pro-

posed, the several Boards of Guardians would be under the necessity of forming one contract with the physician or surgeon for his attendance, and another with the apothecary for the medicines supplied. Even this I conceive would be greatly better than the present mode, as it would tend to convince the Poor Law Commissioners and the several Boards of Guardians, that medical and surgical attendance and medicines absolutely possess some intrinsic value—a fact which at present they are either very unwilling or utterly unable to comprehend.

I will now, sir, conclude what I fear you will call a tedious detail upon a threadbare subject, by subscribing myself

Your very obedient servant,
G. HARVEY.

Castle Hedingham, Essex,
August 9, 1840.

OBSERVATIONS
ON THE
OPERATION FOR STRABISMUS
CONVERGENS.

To the Editor of the Medical Gazette.

SIR,

HAVING had frequent opportunities at the London Ophthalmic Hospital, Moorfields, in private practice, and amongst my professional friends, of observing the comparative advantages of the different modes employed for the division of the internal rectus muscle in cases of strabismus convergens, I beg to state that I have, in several cases, derived great advantage from the use of a blunt hook, designed by Mr. James Adams, of Broad-street, and which this gentleman proposes offering to your notice. This instrument enables the operator to secure the muscle at its narrow part, and in a very confined space. We thus avoid the necessity of making a large incision in the conjunctiva, the healing of which wound has been slow and unsatisfactory in most of the cases which I have seen operated on by other means. It has always been found desirable to draw the eye outwards during the operation, and *hooks of various forms* have been used for holding the sclerotic, but almost all

the patients wh m I have seen have complained that much pain was caused by the pressure of the hook, whilst it was fixed in the sclerotic near the inner margin of the cornea, and passed over the globe, from within outwards, for the purpose of bringing into view the tendon of the internal rectus. It has been suggested that we may fix the globe without the assistance of any hook; glad indeed shall I be if we can hereafter effect this, and thereby save our patients some suffering. I have recently fixed the eye by means of a *delicate hook*, which has been made by Mr. Weiss, for my friend Mr. James Adams, and it appears to answer its design very satisfactorily, inasmuch as the *acute angle* which it forms allows the surgeon (as intended by Mr. Adams) to draw the eye outwards *without seriously wounding the sclerotic, or exercising any pressure on the globe*. I have used in different operations, and seen others use, the curved scissors, with the outer blade blunted at its extremity, or a narrow blunt-pointed knife, for dividing the muscle after it has been raised by means of the large blunt-hook. The knife appears to me the preferable instrument; but as, is the case with every new operation, we shall, no doubt, have numerous propositions offered to the profession, each in its turn, advanced as the best mode of performing this operation, and experience alone can determine which plan may possess the greatest merit. I have seen cases at our ophthalmic hospital, as well as in private practice, wherein the eye continued to turn *slightly inwards* for a short time after the operation, although the internal rectus had been completely divided; but in a day or two this obliquity has been lost. In some of the cases which I had under my notice the *external* rectus has for a short time after the operation drawn the eye *outwards*; but this obliquity has likewise disappeared. I have not seen any instances in which it has been necessary to divide other muscles than the internal rectus for strabismus convergens, although I have heard of such cases. I consider, sir, that the profession and the public owe much to our continental brethren who originated this operation, and to those gentlemen who, by their talent and ingenuity, have simplified it. The operation can now be performed in less than one minute, and in some cases

with but little pain: it becomes our duty to watch carefully its effects, and to act accordingly. Apologizing for the length of this communication,

I am, sir,

Your obedient servant,

GILBERT MACKMURDO, F.R.S.

Lecturer on Anatomy and Physiology at St. Thomas's Hospital, &c., &c.

7, New Broad St., August 1, 1840.

MEDICAL GAZETTE.

Friday, August 14, 1840.

“Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”
CICERO.

HEALTH OF THE NAVY.

SHOULD medicine ever advance from the rank of an art to that of a science, it is clear that statistics must have a chief share in the happy change. If we wish to know, for example, whether fever is best treated by purgatives, or calomel, or the cold affusion, or the *méthode expectante*, we cannot arrive at a just conclusion from the picked cases published by the partisans of each system, and the ingenious explanations appended to them; we must examine the records of hospitals, where fever has been treated on the large scale, and form our judgment accordingly.

Those physicians and surgeons, therefore, who preside over such establishments, will do well to recollect that it is from them that improvements in medicine may most reasonably be expected; while those who can combine these results, and demonstrate what ought to be done from what has been done, may hope to rank among the great benefactors of mankind.

Some of the first-fruits of this conviction may be expected from the practitioners of the army and navy, as they are amenable to military discipline, and not liable, like civil practi-

tioners, to be drawn aside from their daily task by caprice, or prevented from fulfilling it by other avocations. Several valuable contributions to the annals of medicine have, therefore, proceeded, of late years, from the medical officers of the army; but the master mind is still wanting, to read the future in the past, and discover Truth in the deep recesses where she lies concealed!

Meantime, each step towards this important end must be commended; and we hail with pleasure the appearance of a parliamentary return on the health of the navy, drawn up by Dr. John Wilson, R.N.*

He states simply and forcibly some of the difficulties which stand in the way of drawing up such documents regarding the naval service.

Sometimes the returns for particular ships have been wanting for one or more periods, from the change of medical officers or other causes. Sometimes invalids, on their passage home from foreign stations, are transferred from one ship to another, and may be reckoned in the returns of both vessels.

Again, ships, in peace-time, are rarely more than three or four years in commission; they then return to England, the crews are paid off, and it is uncertain where the men re-enter the service; and it is, consequently, difficult to trace the slower operations of climate in bringing on disease. In a similar manner, the frequent removal of a ship from one station to another, as from the Cape of Good Hope to the East Indies; or, which comes to the same thing, the great extent of some stations, as the West Indies and North American one, which stretches from the equator to the 60th degree of north latitude, makes it diffi-

cult to ascertain the effect of either climate, singly, on the health of the crews. However, it is obvious that, if we do not learn the effects of a long stay at the Cape on sailors, we solve the more complex problem—what is the result of three months' cruising off the Cape, *plus* a voyage to Calcutta, and half a year's cruising in the Indian seas?

The influence of age on health is striking, says Dr. Wilson, and it would be desirable to know its amount in sea-life; but it seems that it is not easy to find out the age of seamen. Unlike the members of civil society, who often remain at some pleasant fashionable age for twenty years together, your sailor grows old suddenly. Dr. Wilson assures us, that a sailor, eighteen months after being thirty-nine, may become sixty years of age. These sudden transformations (a ship of war being, as it were, the converse of Medea's cauldron) are sad baulks to tables of ages, and calculations deduced therefrom. The ages given, moreover, are often erroneous; not only from design, but from ignorance or carelessness. It would be interesting to know what influence the various diets on board a ship of war have on the health of those who enjoy them. These are of four kinds. "First, there is the admiral's, or captain's, table; second, the ward-room mess for naval lieutenants, marine officers, master, pursers, surgeons, chaplains, and schoolmaster; third, the mess of the mates, midshipmen, assistant surgeons, and clerks; fourth, that of warrant officers; and, last, of seamen and marines."

The first and second table do not much differ; but they both differ from the other two sufficiently to influence health. In the returns of sick and hurt, however, the patients are not classed.

The victualling of the navy is now on

* Statistical Reports on the Health of the Navy for the years 1830, 1831, 1832, 1833, 1834, 1835, and 1836. South American, West Indian, and North American, Mediterranean and Peninsular Commands. Ordered by the House of Commons to be printed, March 24, 1840. Folio, pp. 323.

a pretty liberal scale, having been materially improved in 1825; it was then, we believe, that banian-days, or days of vegetable diet, were abolished. Every person serving on board her Majesty's ships has a pound of bread, a gallon of beer, an ounce of cocoa, an ounce and a half of sugar, and a quarter of an ounce of tea, daily; besides a pound of fresh meat, and half a pound of vegetables, or else three-quarters of a pound of salt beef, and the same weight of flour, alternating with the same quantities of salt pork and peas. There is also a weekly allowance for oatmeal and vinegar; and suet, currants, and raisins, may be substituted for a portion of the flour. There is a table of equivalents, which seems just and sensible enough, but is too long to quote; specifying, for instance, that a pound of butter is to be considered equal to a pound of sugar, &c. &c. The ration of beer, it seems, has been altogether discontinued since the year 1831; a quarter of a pint of spirits is given daily instead; or, a pint of wine, which however, is issued only on the Cape station. We should have thought it might have been issued to the Mediterranean force likewise, instead of liver-burning spirits. To estimate the effect of the daily dose of rum on the sailors' health, it would be requisite to know what measures are used on board: if acts of parliament are observed, and the Imperial measure is used, each man's daily modicum is $\frac{3}{4}$ v.; if the measure of wine-merchants and publicans is adopted, it is about half that quantity. After using salt provisions for a fortnight, there is a daily allowance of lemon-juice and sugar. Till 1796, scurvy continued to infest the fleet; in 1797 the victualling was changed and greatly improved, and since that period still farther ameliorations have taken place; and scurvy, fever, dysentery, and ulcer, have declined, as the bodily and mental vigour

of seamen has increased. * Previously to 1797 the rations of seamen and marines were at least a third less than they are now. They are not in excess at present; what must they have been fifty years ago? Sir Gilbert Blane, when asked if he did not attribute the prevalence of scurvy to the deficiency of diet, answered, that some said it was the salt food, but he believed it was the want of food.

Water, at once essential to life and health, was formerly kept on board ships of war in casks. "It became slightly fetid, from the disengagement of hydrogen, in a few days, and in a fortnight or three weeks, so loathsome, as to be swallowed with repugnance, even when called for by urgent thirst." * * *

"Water so putrid and offensive, often so thick, and green from vegetable admixture, and decomposition, and emitting so strongly the fætor of rotten eggs, as to disgust at once the sense of smell and of taste.*"

All this is now remedied by the use of iron tanks. There is a slight admixture of oxide of iron in the water, especially in stormy weather, or when the tank is nearly empty. The greater part of the suspended oxide, however, falls to the bottom of the vessel into which it is drawn, and what remains is neither injurious nor offensive. It is to be regretted that the water which is taken on board is not always wholesome. In some foreign ports good water must be paid for; and to save a small charge, bad water is taken instead—a most pitiful piece of economy!

The table of diet for patients in the Royal Naval Hospitals and Marine Infirmary is judicious, and if the articles are the best of their kind, leaves little to be desired on that score. Thus, a patient on full diet has daily one pound of bread, one pound of beef or mutton, one pound of potatoes or greens, twenty-

* Dr. Wilson, in Statistical Reports, p. xiii. & xiv.

five drachms of herbs for broth, fourteen drachms of barley, eight drachms of salt, sixteen drachms of vinegar, four of tea, sixteen of sugar, one-third of a pint of milk, one pint of broth*, two pints of small beer, or one and a half of strong; together with wine or porter, at the surgeon's discretion, not exceeding a pint of the former, or a pint and a half of the latter. The medical officer may prescribe veal, fowl, or fish, in lieu of beef and mutton; and also, rice or flour-pudding. And while the tonic diet is regulated on this liberal scale, food is withheld from febrile patients with equal discretion. The fever diet consists of eight ounces of bread, or four of sago, four drachms of tea, twenty drachms of sugar, one-third of a pint of milk for tea, and one-fourth of a pint for diet.

The anterior administration of a ship, though conducted with care, seems to admit of improvements. The sailors are excessively crowded in their hammocks, and the washing of decks is often carried to such a pitch, that the health of the men suffers from the constant evaporation. Dr. Wilson prefers dry stoning, or, at any rate, dry cleaning; though we suppose that the scrubbing-brush and pail must come into requisition occasionally. Personal cleanliness is strictly enforced in the navy. Shirts, frocks, and duck-trowsers, are changed at least twice a week; besides bathing in fine weather, and regular ablution, shaving and combing, at other times.

Something has been done, too, to supply sailors with amusive and instructive reading. Religious works were first

sent for their use; and by an Admiralty order, dated August 1838, a library of 270 volumes is to be established on board of large ships, and of 100 volumes in small ones. A previous order had directed elementary instruction to be given to sailor boys, and other seamen, and marines, who may require it. The able compiler of these documents justly thinks that intellectual improvement advances the physical state of those who are the subject of it.

Free ventilation between the decks is still a desideratum; wind-sails are very partial in their operation, and even the apparatus lately invented by Captain Warrington is liable to strong objections. Our author suggests a remedy for its imperfections.

These reports do Dr. Wilson great credit, and we are glad to find that a continuation of them is promised.

IRISH COLLEGE OF SURGEONS.

To the Editor of the Medical Gazette.

SIR,

You will, I trust, permit me to address to you a few observations on the subject of your editorial article of the 24th of July. I should have asked this favour ere now, but that I have only this week seen the article for the first time.

It is not my purpose to enter into the question how far the curricula and examinations of the several Colleges are too high or too low, too severe or too lenient; but only to call your attention to the justice of the charge made, of the imputation cast, upon the Irish College of Surgeons by a gentleman high in professional character, high in public estimation, and high in his pretensions to professional precedence; by a gentleman who is an old member of the body which he accuses, who has enjoyed the highest honours which that body can confer, and has acquired an ample fortune by the exercise of the professional privileges which it bestows; by a gentleman, in fine, who might be supposed to be acquainted with the sub-

* According to the "note" at p. xv. the meat for the full and half diet is to be boiled together with barley and vegetables, which will make a sufficient quantity of good broth to allow a pint to each patient on full and half diet, and half a pint to each on low diet.

If we understand this aright, first, the patient on full diet will obtain in his broth the essence of no more meat than if he was on half diet. Secondly, no patient will ever have his beef or mutton roasted; which would certainly be a good form of giving it in many cases.

jeet on which he speaks, who has no apparent motive for misrepresentation, and who, if he cannot be grateful, ought, at least, to be just. This task I consider a duty, inasmuch as the address of Mr. Carmichael, which contains the imputation, has been now circulated, not only among the profession, but also among the public, through the medium of a newspaper. It is a duty, too, which you have, and I think with reason and candour, called upon the Irish brethren of Mr. Carmichael to undertake; and it is one of which I am obliged thus to acquit myself, because I have been debarred the opportunity of doing so in the manner which I considered the most fitting, by the friends, by the party, of Mr. Carmichael. Having seen the address in a public newspaper I intimated, at a meeting of our College, that it appeared to me incumbent upon the body to notice the aspersion cast upon it. I could not persuade myself that Mr. Carmichael had given utterance to sentiments so injurious and so unfounded, and, before making a motion upon the subject, I called his attention, by letter, to the paragraph of his address which contained the charge. I received a reply from Mr. Carmichael, in which he adopted the charge, and intimated his readiness to meet any motion I might make upon the subject. At the first opportunity I accordingly gave notice that I would bring the address of Mr. Carmichael under the consideration of the College at its next meeting. In this course I acted in accordance with the double obligation of courtesy towards Mr. Carmichael, and attention to the established order of business in the College; but it would seem that the principle by which I regulated my conduct is not recognized by the friends and party of Mr. Carmichael. By an extraordinary coincidence they were present in force, while, the matter being one of course, there were but few upon the other side; they made a motion in defiance of order, "that my notice be not received;" the president, despite of my remonstrance against so irregular a proceeding, put their motion from the chair; when I protested against such a course they attempted to silence me by clamour; an insult—one of the grossest which can be cast upon a gentleman—was offered to me; and when, in consequence of the necessity imposed upon me by the insult, I retired from the

meeting, they carried their motion in my absence, and thus, by a violation of order, of courtesy, and of duty, they stifled inquiry, and left the institution of which they were members and officers to lie under the imputation which had been thrown upon it. And these, sir, are the members of the Irish College who please to *call themselves Reformers!*—these are the men who complain of the abuses of existing institutions!—these the men who are to be acknowledged the sole judges of right and wrong!—these the constitution-makers, from whose hands we are to receive the boon of equal rights and equal laws! What think you of a constitution from which inquiry should be banished, or in which it must hang upon the pleasure of a party or of an individual? In which some favourite leader might violate its laws, libel its character, betray its trust, or commit any enormity; secure from detection and from punishment so long as he has a faction at his back to screen him from inquiry. And what other kind of constitution can be expected from men such as these? But now, sir, for the justice of Mr. Carmichael's charge. His language is, that the Irish College of Surgeons have, from a very disreputable motive, lowered their examination to the level of the other Colleges. You will not understand me to pass any judgment upon the examination of the other colleges. You have undertaken their justification, and I may safely leave it in your hands; but, for the Dublin College, not only has it not lowered, but it has "of late years" considerably extended its examination, as well in deviation as in the range of subjects which it embraces. Formerly the examination of the Dublin College was confined to anatomy, physiology, and surgery, with some pharmacy. It was one examination divided into two parts of one hour at least, on each of two days. Within late years, however, there have been added to the examination, as originally instituted, and which continues still of the same duration, two other distinct examinations; one upon chemistry, materia medica, botany, jurisprudence, and pharmacy; the other upon midwifery, and diseases of women and children. Thus, whereas a student had formerly, when, as Mr. Carmichael says, "the Irish College maintained a high character for the rigour of its examination," to undergo but one examination, and to

be examined only upon four subjects, he must at present submit to three examinations, and be examined upon twice as many subjects as previously, in order to obtain the license of our College. Such sir, is the present discipline of the Dublin College; and, whether it be superior or inferior to that of the other Colleges, manifestly it has not been lowered, but on the contrary, raised to a higher standard. If the character of the examinations given has been altered, that has been the doing of the Examiners alone, for no instructions to such effect have ever been given by the College. If the examinations have been altered for the better, *reformer* as he is, Mr. Carmichael ought surely not complain, and his party cannot feel greatly flattered if he do, for they form the majority—the great majority of the Examiners. If they have been altered for the worse, then Mr. Carmichael's party, the *reformers*, deserve the blame, for, again, they form the great majority of the Examiners. If, either from incompetence or misconduct, the Examiners have impaired the examination, is it not the duty of the *reformer*, Mr. Carmichael, to lay the matter before the College and the profession, and to move for their dismissal? In any case, the charge, if it has taken place, cannot be made a charge against the College, and in my humble judgment our examinations may have been greatly changed without having been at all impaired.

I trust, sir, that our College now stands acquitted in your estimation from the aspersions of Mr. Carmichael, and that you will agree with me that he and his party would do well to furnish better proofs of their ability and their honesty in the case of reform, than maligning an institution whose character they are bound by honour and by oath to maintain.—I have the honour to remain,

Your obedient servant,
BENJAMIN ALCOCK, M.R.C.S.I.

THOUGHTS ON MEDICINE.

SOME papers have appeared under the title of *Esquisses* in the *Gazette Médicale*; the following is a part of their contents.

Do you wish to know the most subtle, the highest, and the most complicated equation, and consequently the most difficult one to solve? It is a disease. Great fineness of perception, exquisite discernment, unbroken attention, and profound judgment, are all required. Every thing

escapes in probabilities, and a cruel *perhaps* is always present, like a two-faced demon, to neutralize our induction, and disquiet our mind. But go into the world, and you will find men born blind who are always quite sure, who cure infallibly, and shrug up their shoulders at the least doubt; and there are persons who believe and admire them; nay more, who strictly execute what they prescribe. What then are life, health, and disease, in the opinion of the laity? What idea do they form of medicine?

I love that thought of an oriental poet; “we must cling to virtue by the root, and to knowledge by the summit.”

Facts are stubborn, it is said, but how can we believe it? On the contrary, they seem very supple, malleable, complaisant, and elastic. Facts say and prove pretty nearly what we wish, for all depends on the interpretation. And yet they disclose the truth; just as a block of marble contains a Venus; but then she must be extracted from it. For two thousand years, theories have been framed in medicine with the same facts; the same will be done two thousand years hence, for absolute truth remains for ever veiled from our eyes. Relative truth alone is possible, and alone is known; with this systems and theories are built up, but their base is always fragile and moveable; they pass away, and the facts remain.

A German physician appropriated a special organ to sleep, which he defined to be “an adynamic polarity of the organ of interior intuition, produced by the polarity of the organ of sleep.” This is transcendental science. I am equally pleased with Aristotle, when he defines motion to be “the act of a being in power as far as it is in power.”

Bleeding is very efficacious in pneumonia—good; tartar emetic, in large doses, undoubtedly cures this inflammation—capital; opium has its successes to boast—no question; musk has succeeded in a number of cases—this is admirable! But inform us, with rigorous precision, when we ought to bleed, or give tartar emetic, or opium, or musk? It is just the same with all pathological affections. Shall we ever see the time when it will no longer be allowed to hesitate, or to pronounce an opinion founded on uncertain signs? When indications shall have arrived at this point, medicine will be really great and powerful. Worshippers of science, then hasten to the temple, and sacrifice a hundred cocks to Æsculapius!

Why is practitioner so furious against practitioner? why does he blame him in

every thing, about every thing, *apropos* to every thing? The reason is this; he has laboured on the same subject, and has not succeeded so well. Do you not see the caterpillar depreciating the work of the silk-worm; for the caterpillar spins too.

"The gods are going from us," is the cry on all sides. Let us not believe it; the gods are immortal. Reason, good sense, virtue, and truth, will for ever remain among men, to enlighten, guide, and console them.

The philosopher Ariston, of the island of Chios, substantially recognised but one virtue—*health*. According to him, all other virtues were mere modifications of this essential, primitive, physical, and moral quality. There is great profoundness in this idea, for health means *harmony*.

Write according to your theory of writing, say what you choose of medical style, compose a work where there are facts and nothing but facts (the fashionable style), and laugh at rhetoric and phrase-makers. Nevertheless, remember two things: first, that even in medicine style is the immortal stamp of good and beautiful ideas; and secondly, that a book which wearies is a book which has ceased to live.

Do you wish to know what it is that preserves and perpetuates error, particularly in medicine? It is the portion of truth which is mixed with it, and the authority which it derives from this portion; men are deceived by it for ages.

At the bottom of every fact there is an idea. The hieroglyphic has a meaning; the question is to give the truest interpretation—a great and difficult problem.

Young man, take care that it is not too soon; old man, take care that it is not too late.

I shall always continue to say as a person of sense did: men of elevated mind fall down before merit; ordinary men fall down before success. With the latter, success justifies every thing; with the former, success itself requires to be justified.

According to Plato, the mind is that which makes use of the body. A religious philosopher of our time, taking hold of this thought, defines man to be an intelligence served by organs. Well, but the inverse definition is equally true; man is a compound of organs served by an intelligence.

Oh! peace of the soul! thou happy concord of opinions with sentiments, actions, conduct, and social position. It is thou that allayest the fire of the passions, that soothest the nerves, renderest the blood calm and sweet, that maintainest the forces of the frame in wholesome equilibrium, that givest to the vital rhythm the regularity so favourable to our well-being; in thee are found health, happiness, the life of our life, the sovereign good—if, indeed, this exists upon our unhappy planet!

[To be continued.]

CLINICAL

LECTURES ON ERYSIPELAS,

Delivered at the Hospital of La Pitié, Paris,

By M. VELPEAU.

Reported for this Journal by J. HENRY BENNET,
B.L. & B.S., Sorbon.

*Various diseases confounded with erysipelas—
Erysipelas properly so called—Angioleucitis—
Phlebitis—Phlegmonous erysipelas—Causes.*

ERYSIPELAS, although very frequently met with both in medical and in surgical wards, is one of those affections which is the least understood. If, indeed, we submit to a severe analysis the various descriptions of erysipelas which authors have given, it soon becomes evident that they have confounded under the same name various diseases; and this accounts for the discrepancy that exists between them with respect to the treatment of the malady. The ancients appear to have confounded, under the term erysipelas, even a greater number of inflammatory affections than modern writers, as is proved by the multiplicity of names under which it is designated. Thus, we find it described by them as the sacred fire, the red fever, the rose, St. Anthony's fire, &c. These terms, however, were evidently applied not only to erysipelas but also to other eruptive diseases. At a later period, and indeed in our own times, erysipelas has been confounded with erythema, with various bul- lous and dartrous affections, with angio- leucitis or inflammation of the lymphatic vessels, and with external phlebitis. As long as this confusion lasts it is impossible to form a correct opinion of the nature of the disease; it is equally impossible to decide what plan of treatment ought to be adopted, as some of these affections are easily cured, whereas with the others it is quite the reverse. J. Frank, for instance, informs us that erysipelas is extremely frequent in Lithuania, and that it readily

yields to judicious treatment. But on examining the account he gives of the disease, we recognise, instead of erysipelas, over which no plan of treatment appears to exercise much influence, a simple erythema, such as we often meet with in young persons who are arriving at the age of puberty, and in all old people, badly fed, or of a deteriorated constitution. If we really wish to understand the nature and treatment of erysipelas it must be separated from the other diseases with which it has hitherto been confounded: this we will endeavour to do.

Setting aside erythematous, bullous, and dartous affections, the diagnosis of which is too simple to require comment, I shall proceed to the examination of the anatomical and physiological characters of erysipelas itself, and of those affections which are most commonly mistaken for it, and also most frequently combined with it, viz., diffusive phlegmon, or phlegmonous erysipelas, angioleucitis and phlebitis.

ERYSIPELAS PROPERLY SO CALLED.

This, the simple or real form of erysipelas, may be recognised in many of the descriptions which authors have given of the disease. The characters which it presents are seen to the best advantage on the limbs. When it attacks the genital organs, the perinaeum, &c. these characters are much less distinct, owing to the subcutaneous cellular tissue in these regions being generally more or less infiltrated with fluid, when the skin, which is extremely thin, is inflamed. The following are the anatomical symptoms of the malady: the skin suddenly assumes a red colour, the redness presenting itself in patches slightly raised above the level of the healthy parts. The patches do not, however, acuminate, but appear as if they were applied on the skin, between the cutis vera and the epidermis. The tumefaction and the redness do not decrease gradually, as in other inflammations of the skin, but terminate abruptly. The line of demarcation between the healthy part and that which is affected is, therefore, exceedingly well marked. The colour of the inflamed skin is generally a yellowish red, but it is subject to variation according to the constitution of the individual, or the state he is in when attacked. With persons of a lymphatic temperament, who have been weakened by loss of blood, the skin is sometimes of a milky yellow. In cases of this nature, you will find that although the skin presents this white appearance it offers all the other physical characters of erysipelas: the tumefaction might not inaptly be compared to a liquid

pourred over the healthy surface. This slight but general tumefaction of the skin, accompanied by the irregular festooned margin, is not met with in any other disease. The subcutaneous cellular tissue does not appear swollen, except in some few regions, as I have already stated. If the skin is attentively examined you will often find minute vesicles, some as small as a pin's head, some larger. These vesicles frequently increase in size so as to form phlyctenæ, and when this occurs the erysipelas has been called bullous. The skin is the seat of burning heat, and becomes acutely sensible, contact with foreign bodies giving rise to more pain than in any other cutaneous inflammation.

Before the local phenomena make their appearance there are nearly always general symptoms, the intensity of which varies. These premonitory symptoms are similar to those which are observed in eruptive fevers, such as scarlatina or variola. Indeed, it is exceedingly difficult, in this stage of the disease, to say what it will eventually be; the constitution of the patient, the state in which he is at the time, and other circumstances, must guide us in forming our opinion. The patient is first seized with chills or rigors, to which succeed great heat, burning thirst, and extreme restlessness. These symptoms are often accompanied by nausea, vomiting, sometimes by violent abdominal pains. They may be present from one to seven days, and generally persist, and sometimes, indeed, become more violent when the erysipelas has appeared. In variola, &c. on the contrary, three days after manifestation of the general symptoms, the eruption breaks out, and as soon as it has taken place they disappear, or at least are sensibly mitigated. Ataxic or adynamic symptoms may be present, as in all other eruptive fevers.

When once developed the progress of erysipelas is peculiar. It may be termed a creeping or ambulatory disease, the red patches never remaining in the same spot, but gradually spreading to the adjoining parts. In some cases, however, it is called fixed, when, for instance, it attacks the head, but the entire surface of the head can never be affected at once.

The creeping nature of erysipelas must always be kept in mind, as it exercises the greatest influence over the duration of the disease. Each patch of inflammation lasts but four or five days; consequently, were the eruption to take place at once on the entire surface which is to be affected, the malady would terminate in the course of a week or ten days. As, however, the patches appear successively, and may, gradually progressing, invade the entire

surface of the body, the duration of erysipelas is very uncertain. It may thus perpetuate itself during a month or more, and when this is the case, even this, the simple form of erysipelas, becomes a very dangerous malady.

Erysipelas, as characterized by the anatomical and physiological symptoms which I have enumerated, may be early recognised and separated from other diseases. We will now briefly examine the characteristic symptoms of Angioleucitis.

ANGIOLEUCITIS.

Angioleucitis, or inflammation of the lymphatic vessels, differs in nearly every respect from erysipelas, with which it has lately been confounded by many writers. It may either be spontaneous or secondary: that is, it may appear under the influence of a peculiar state of the economy, or it may be the result of local injury.

The forms under which it presents itself are extremely diversified. When the consequences of a prick, a wound, &c., the lymphatic vessels of the wounded part are often inflamed before the ganglions to which they direct their course, and give rise to irregular, red, ribbon-like streaks. These vascular streaks follow a tortuous course, extending in the direction of the ganglions either a few inches, or the entire length of the limb, and do not offer any tumefaction either to the eye or to the touch. Thus, when the hand, arm, or fore-arm, are the seat of the lesion, the superficial lymphatics are generally inflamed primitively, and it is only subsequently that the ganglions of the axilla become tumefied and painful. In other instances, on the contrary, the ganglions appear to be first affected. When, however, this is the case, a close examination will generally shew that some vascular streaks are to be found in the vicinity of the lesion. The patches are irregular; sometimes there are several, sometimes there is only one. Their colour is a livid red, not a yellowish red, as in erysipelas. The skin is smooth and even, does not present any vesicles, and seems rather more elevated in the centre than at the circumference, so as to form a slightly acuminate surface. These patches also terminate insensibly, so that it would be difficult to point out the precise spot where the skin ceases to be inflamed. In erysipelas, on the contrary, as we have already seen, the tumefaction is universal; indeed, if one part is more elevated than another, it is rather the circumference than the centre. In erysipelas the tumefaction ceases abruptly, and appears superficial, as if it were existing between the cutis vera and the epidermis, and not underneath the skin, as in angioleucitis. In this latter disease there are

generally several patches of inflammation, which although sometimes united by inflamed streaks are often separated from one another by healthy tissues, whilst in erysipelas the inflammation may extend irregularly in various directions, but nearly always remains connected with the principal seat of inflammation.

If we now examine the physiological symptoms, we shall not find the same difference existing between the two diseases. The premonitory symptoms are nearly the same; indeed, before the eruption has appeared, it would be difficult to determine whether erysipelas or angioleucitis is about to declare itself. Thus angioleucitis is often preceded by thirst, nausea, fever; in a word, by all those symptoms which are observed in eruptive fevers. When, however, we find one or more ganglions tumefied and painful, there is reason to believe that angioleucitis and not erysipelas will ensue, unless there be erysipelatous patches already existing. It has lately been asserted by some authors, and among others by J. Frank, that tumefaction of the ganglions of the neck, accompanied by fever, is a certain symptom of impending erysipelas; but the assertion is by no means correct, as the cervical ganglions often become tumefied without erysipelas supervening; indeed, any injury done to the head will give rise to their tumefaction. The origin of this opinion may easily be accounted for. Erysipelas of the face and scalp is very frequent, and if the inflammation remains confined to the scalp, the nature of the affection is often not recognised at first. The ganglions, nevertheless, become inflamed, and when the erysipelas does become visible their tumefaction is considered to have preceded its invasion. It is, therefore, evidently difficult, in some parts of the body, to distinguish angioleucitis from erysipelas during the first period of the malady. Still, if attention be paid to the pathognomonic characters of these diseases, a correct diagnosis may be formed, even in such cases as those to which I allude. When the cervical ganglions become tumefied, and the fever is but slight, it is most likely that angioleucitis will supervene. When, on the contrary, the general symptoms run high, the tumefactions of the ganglions generally indicate erysipelas.

The more we recede from the commencement of the disease, the more we find that these affections differ. The erysipelatous patches only last, as I have already stated, four, five, or eight days, and if the disease is of longer duration, it is that, under the influence of a general morbid state of the economy, the inflammation successively attacks parts previously healthy. Erysipelas may termi-

nate by superficial suppuration, the serosity contained in the phlyctenæ becoming purulent; but never by suppuration or gangrene of the subcutaneous tissue, as in that case it is no longer simple but phlegmonous erysipelas. In angioleucitis each patch constitutes as it were a phlegmon, and may run through all the periods of phlegmonous inflammation, terminating by resolution, induration, or gangrene. Nor is the inflammation always confined to the superficial lymphatic vessels; sometimes it penetrates the deep-seated tissues, invading the lymphatics which are situated beneath the aponeurosis. The anastomoses which exist between the two layers of vessels at once explain this extension of the inflammation. The superficial lymphatics, and the cellular tissue which surrounds them, are first inflamed, and an abscess is formed: the inflammation is then propagated to the deeper-seated vessels, a new phlegmon taking place, and this may continue until the limb is penetrated in various directions by a chaplet of abscesses, if I may be allowed to use the term. Angioleucitis, when arrived at this stage, cannot be mistaken for erysipelas.

PHLEBITIS.

Phlebitis is a disease which has been confounded with erysipelas by J. L. Petit and others, although the difference between the two is even greater than that which we have found to exist between erysipelas and angioleucitis. Since, however, the spirit of analysis has become more prevalent, most practitioners have learnt to distinguish them from one another. Yet even now the inflammation of the cellular tissue which surrounds the veins, or external phlebitis, is occasionally mistaken for erysipelas. I need scarcely say that it is only with the external form of inflammation that this affection could possibly be confounded; internal phlebitis, followed, as it rapidly is, by purulent absorption, and accompanied by the usual train of symptoms, is too well defined a disease to be mistaken for a cutaneous affection. External phlebitis generally occurs in the arms or legs, after bleeding. The premonitory symptoms are but slight in most instances, merely consisting in a little pain and uneasiness of the part. The cellular tissue which surrounds the inflamed vein, as also the adjoining integuments, becomes swollen and red, and patches are thus formed along the course of the vein. These patches appear deep seated, and if they are examined with the finger it will be found that they rest on a kind of knotty cord, which is the inflamed vein. They communicate with one another, but differ, nevertheless, from the

patches we meet with in angioleucitis. These latter are, it is true, united by red streaks, but they do not present the cord I have just mentioned, and are scarcely perceptible to the finger. In external phlebitis, the ganglions are not generally painful, whereas in angioleucitis this pain in the ganglions is one of the first symptoms that appear. Erysipelas is even more easily distinguished from this affection than from angioleucitis. Indeed, it is only because the characters of erysipelas itself were not well defined, that the two diseases have been confounded. Scarcely any of the symptoms of that affection are to be traced in external phlebitis, neither the precursory symptoms nor the uniform tumefaction of the skin, nor its irregular festooned border.

In external phlebitis, as in angioleucitis, the inflammation may terminate by resolution, but the resolution is a much longer process than in the latter complaint, the veins long continuing to form knotty cords.

PHLEGMONOUS ERYSIPELAS.

We have now to consider phlegmonous erysipelas, or diffused inflammation of the subcutaneous cellular tissue, a much better term than the one usually employed. Were it adopted, the word erysipelas might then be reserved for the simple inflammatory affection of the skin which we have just described. This is one of the most serious diseases that surgical practitioners have to treat. It has only been separated from other affections within the last thirty years. It was first described at length by Duncan, and then by Dupuytren, and has, since then, been much studied, especially by hospital surgeons. It is, however, evident, from the treatment adopted by various practitioners, and from the various results which follow that treatment, that it is not always the same malady that is held in view.

The seat of this disease is the subcutaneous cellular tissue. This tissue is composed of two layers; the first, the one in immediate contact with the skin, may be called the areolar layer. It is formed by cellular lamellæ, interwoven with one another, and adherent to the internal surface of the skin; it is a mixture of fibrous, cellular, adipose, vascular, and nervous lamellæ. The second layer, that which is immediately applied to the aponeurosis, presents neither adipose nor cellular filaments, but offers a lamellated structure; it is what Chaussier called "the lamellated element." When the inflammation is situated in the first layer, it extends with difficulty, owing to the structure of the tissue, and thus tends to produce a circumscribed phlegmon. When, on the con-

trary, the internal layer is inflamed, finding but little resistance to its progress, owing to the lamellated nature of the cellular tissue, and being confined between the denser cellular layers and the aponeurosis, the inflammation may extend rapidly, and invade the entire limb in the course of a few days. More or less effusion of liquid also takes place, and, as no organic fluid can long remain out of the vessels which naturally contain it, without changing its properties, it becomes troubled, and then purulent. The vessels of the areolar layer passing through the effused fluid, also soon become mortified.

Let us now examine the symptoms by which phlegmonous erysipelas may be recognised. When it supervenes as the consequence of a wound, there are seldom any premonitory symptoms. The edges of the wound suddenly assume a swollen and tumefied appearance, and the surrounding tissues become soft and boggy. The part affected presents a regular, deep-seated redness, similar to that of phlebitis, but differing from the venous redness of angioleucitis, or the yellowish redness of erysipelas. This redness disappears on pressure, and does not return as quickly as in the affections we have just examined. The tissues also retain the impression of the finger, which is never the case in angioleucitis or phlebitis.

The march of this disease is also peculiar. Like simple erysipelas, it progressively invades the adjoining tissue; but, unlike that affection, it does not abandon the regions which it has already attacked. In the course of five or six days the cellular element becomes mortified, and, if an incision is made, escapes under the form of white flakes, as in simple phlegmonous inflammation, which has terminated by suppuration.

If these characters are attended to, it will be nearly impossible to confound this affection either with simple erysipelas, or with the other two diseases which we have examined.

These four forms of inflammation are frequently united, and may, in that respect, be compared to the inflammatory affection of the eye. This circumstance must be always borne in mind, as their progress, their treatment, and their consequences, are essentially different. Simple erysipelas may be accompanied by phlegmonous erysipelas, by angioleucitis, or by phlebitis, and reciprocally. Thus a patient is seized, after the usual precursory symptoms, with simple erysipelas, and the affection, during a variable period, follows its usual course. The inflammation, however, is propagated more or less suddenly to the subcutaneous cellular tissue, and thus gives rise to diffusive phlegmon.

This extension of the inflammation is more especially to be feared when the eyelids, the scrotum, the margin of the anus, &c. are affected, there being in these regions beneath the skin a very loose layer of cellular tissue. It is by no means difficult to ascertain when the complication has taken place. In simple erysipelas no swelling, to any extent, occurs; and when the skin presents the tumefied acuminate appearance which I have already described, we may be certain that the cellular tissue is inflamed. Sometimes it is angioleucitis which appears as a complication of the original disease, the ganglions which communicate with the seat of the erysipelas becoming tumefied and painful. The patient is again seized with rigors, complains of thirst, want of sleep, &c. If the affection of the lymphatics is slight, this is all that occurs. If, on the contrary, it is more serious, the red streaks and patches of angioleucitis make their appearance, and the ganglions become indurated. It is, however, easy to see that the erysipelas and the angioleucitis are in reality two different affections, the characteristics of which may be distinguished, although they be combined. Lastly, either internal or external phlebitis may supervene. The symptoms of internal phlebitis, the small pulse, the prostration of strength, the drawn features, are too well known not to be at once recognised; and the red patches, resting on an inflamed cord, and accompanied by partial induration, will sufficiently characterise external phlebitis.

These three inflammatory diseases may also exist primitively, and the erysipelas itself appear as a complication. Thus, I have frequently seen patients suffering under angioleucitis suddenly seized with nausea, and an exacerbation of the febrile symptoms, followed by the appearance of the erysipelatos eruption. In internal phlebitis, the entire economy is so deeply modified, that the skin seldom becomes the seat of active inflammation. In external phlebitis, on the contrary, erysipelas often supervenes; and this is easily explained when we consider that there is a certain degree of inflammation already existing. In some instances the erysipelas appears to cure the affection of the veins.

You see, therefore, that these four diseases may exist simultaneously in the same individual, and that you may, nevertheless, still distinguish the characteristic symptoms of each. When this is the case, the angioleucitis will be the first to disappear, then the simple erysipelas, after which the phlebitis, and, lastly, the diffusive phlegmonous inflammation. We will now examine the causes and the nature of erysipelas.

Causes.—The causes of erysipelas are of

two kinds; the determining, and the predisposing. The determining causes are everything that can irritate the skin; the predisposing are more difficult to discover. Sometimes for two or three months we do not see in our wards a single case of erysipelas; whilst, at another period, the slightest prick, the slightest incision, the bite of a leech, the application of a blister, is sufficient to give rise to it. But, although we are inevitably led to admit a predisposing cause, we know not where to look for it. It is not to be found in the age, the sex, or the temperament of the patient: these predisposing causes being in action at all times, it is impossible to explain through them the appearance of erysipelas. Many authors have endeavoured to account for its manifestation by the action of external agents. Thus, some have attributed it to cold, because they saw it in winter; others, to heat, because they saw it in summer; whilst others account for it by a sudden change from heat to cold, or from cold to heat. Are we, however, authorized to look upon appreciable meteorological phenomena as the predisposing cause of a disease which is met with in every season? In the surgical wards of La Charité, for instance, erysipelas has raged this year during the winter; the year before, during the summer; and the year before that, during the autumn. As it is a disease which exists epidemically, some again have accounted for its appearance by the supposition of a deleterious principle contained in the atmosphere, which modifies the state of the constitution. Many writers maintain that erysipelas is a contagious malady. Lawrence, in England, Gibson, in America, have defended this opinion, which certainly has arguments in its favour. But these arguments are not sufficiently powerful to carry conviction with them, and we may yet consider the question as far from being satisfactorily settled.

If we examine the action of this predisposing cause, we find that it greatly modifies the disease. Erysipelas cannot certainly be looked upon as a simple inflammatory affection. It neither presents the characteristics nor follows the course of simple inflammation; nor is it possible to produce it artificially. Its course appears rather to resemble that of eruptive fevers; we may, therefore, conclude that, in erysipelas, the inflammation is not the real essence of the disease. The pale lactescent form of erysipelas, which we sometimes observe on extenuated patients, is an additional proof of the correctness of this view of the disease. We have now in our female ward a remarkable case of this form of erysipelas. The patient in question entered the hospital about a fort-

night ago, labouring under a white swelling of the knee joint, and disease of the uterus, and was so extenuated by continued hæmorrhage, &c., that one would have supposed it nearly impossible for an extensive cutaneous inflammation to appear. Yet, after being preceded by the usual symptoms, erysipelas made its appearance a few days ago. The skin, however, instead of presenting the usual yellowish red tint, is of a pale colour, scarcely different from that of the healthy integument, merely offering the slight general tumefaction with the irregular festooned border of erysipelas.

Erysipelas appears to be a general disease, the origin of which is in extensive alterations of the fluids; it is, consequently, to this general modification of the economy that the attention of the practitioner should be chiefly directed. To resume in a few words, erysipelas is but the shadow of a much more serious affection; and its gravity depends less on the extent of the inflammation than on the intensity of the general symptoms which have preceded or accompanied it.

Some authors deny that the cause of this affection is general, because it often appears without any precursory symptoms. We often, it is true, meet with it in surgical cases when nothing has forewarned us of its impending invasion; but this cannot be considered a serious objection.

The appearance of a disease due to a general cause is not necessarily preceded by general symptoms. If an alteration of the fluids exists, whatever may be the cause, we can easily understand that the economy may resist in the same manner as it would had a poison been taken, but in too small a quantity to disturb the regular exercise of the functions, and that, in its efforts to get rid of the deleterious agent, the skin may become the organ on which that agent is carried.

If we now examine the nature of the erysipelatous inflammation, we shall find that there are many opinions on that subject. Formerly it was said that the skin was the seat of the inflammation. At a later period, it was thought that it occupied the sub-epidermic tissue, and then again the capillaries of the skin were named. In our own times, the venous capillaries of the skin have been fixed upon as the seat of inflammation. This opinion has been defended in France by MM. Ribes and Cruvelhier; in England, by Dr. Copland. I have often minutely examined the skin in persons who had died of this disease, but never found any appearance which could warrant the supposition; nor do the arguments brought forward in favour of this opinion appear very conclusive. How, indeed, is it possi-

ble to prove that the inflammation exists in the venous capillaries, when it has never been possible to examine them. M. Ribes has found small veins underneath the skin filled with pus; but this was not owing to erysipelas, but to phlebitis followed by absorption of pus. M. Cruveilhier also speaks of having seen veins underneath the skin filled with pus; but he has never remarked them in the cutis vera. When we consider that erysipelas often covers a surface of several square feet, it scarcely can be allowed that the capillaries alone are inflamed. It is much more probable that all the tissues which enter into the structure of the skin, the nervous, the adipose, the cellular, the vascular, are simultaneously attacked. Indeed, no symptom seems to indicate that one of the various layers into which the skin has been divided is affected sooner than another; they are all the seat of inflammation, which often extends, as we have seen, to the subcutaneous cellular tissue. Indeed, if we look upon erysipelas as a malady occasioned by a deleterious principle which the economy contains being thrown on the cutaneous absorbing surface, we can scarcely understand even theoretically that one alone of the various elements which enter into the composition of the skin should be inflamed.

These views are of great importance with regard to the treatment of erysipelas. There is an immense difference between those practitioners who look upon the affection as local, and those who consider it to be attributable to an alteration of the fluids. In the eyes of the first, the treatment of the disease is already well known, and little or nothing remains to be done. With the latter, on the contrary, it is very different. Thinking that but little is known about the treatment of erysipelas, they feel convinced researches have yet to be made.

[To be continued.]

MERCER'S HOSPITAL, DUBLIN.

New Instrument for Tapping.

DOCTOR LENDRICK remarked, a few days since, to the pupils of this institution, that he had often, both to the classes of this and Sir Patrick Dun's Hospital, animadverted on the common trocar, which is liable to many objections, especially if used in cases of ascites. It is altogether a rude and clumsy instrument, and can seldom be rendered sharp, except by a very skilful cutler: the canula also rarely fits it. For these reasons it enters the parts with difficulty, and such force becomes necessary, that the viscera are sometimes reached and injured. The canula is liable to be

blocked up by omentum, or, if sharp (and otherwise the canula will not fit,) to wound the vessels of that membrane. For the rectification of these defects many contrivances have been attempted.

Dr. Lendrick shewed the pupils a new instrument, made under his direction by Mr. Milliken, of Grafton Street. He stated that he was not aware of a similar plan having been resorted to. The instrument is the "exploring needle," on a large scale, as to breadth, being about three inches long, two lines and a half broad, and one line and a quarter deep. It has an oblique handle, like that of a gorget. There is a groove on the surface, and the extremity is lancet-shaped, with only two edges, extending not quite to the shoulders of the blade. The integuments may or may not be divided with a lancet, according to the wish of the operator. The instrument is introduced with great ease, and the penetration of the sac is at once known by the gush of fluid along the groove: the operator, who holds in his hand a catheter (No. 4 or 5), nearly straight, and either of silver or elastic gum, immediately passes it along the groove, and its penetration of the sac is simultaneous with the withdrawal of the sharp instrument. The fluid is now allowed to flow through the catheter, pressure with a swathe being applied as the abdomen becomes flaccid. The whole operation may be performed without varying the position of the patient from the recumbent posture in bed. The wound is somewhat valvular. The operator ought to hold the trocar in one hand, and the catheter in the other. The introduction of the second is to be accompanied by the withdrawal of the first. Thus the aperture of the sac is at once hit off.

The operation of paracentesis abdominis was performed this day (27th July.) at Mercer's Hospital, with Dr. Lendrick's trocar, by Mr. Auchinleck. It was done without any previous incision, the instrument entering at once with the greatest ease, and almost without being felt by the patient. A gum catheter (No. 5,) was used; but No. 7 might easily have been introduced. The fluid passed away slowly, and the patient, who was much debilitated, preserved the recumbent posture throughout. One precaution is necessary to be attended to, if a gum catheter be used. After the stylet is withdrawn, the tube is liable to be compressed by the edge of the swathe, and the exit of the fluid impeded. The difficulty is overcome simply by removing the edge of the swathe from the orifice. It is preferable that the catheter should be furnished with two apertures.

Dublin, 27th July.

APOTHECARIES IN RUSSIA.

BUT, in this analysis of the more respectable part of the population of a Russian town, we have omitted one conspicuous person—the apothecary. He is always among the wealthiest in the place. None can sell drugs without a patent; and as only one or two in a provincial town, willing to gain their bread in this way, have influence enough to obtain the emperor's permission, there is but little opposition in the trade. Nothing is paid for the patent, so that the free profits of such a business are often very large. A German, whose daughter is married to the second apothecary of a government town near this (Koursk), told us, that he had seen his son-in-law's books, and seldom found the profits less than 32,000 roubles (or more than £1200) a-year; while the first apothecary, as our informant asserted, draws 50,000 roubles, or £2000 a-year. He instanced a smaller town, in which the two dealers in physic draw 15,000 and 25,000 roubles respectively. There are other parts of the continent where apothecaries are equally wealthy; as in German towns, where they are always among the richest citizens.—*Brenner's Excursions in the Interior of Russia.*

OPERATION FOR CATARACT.

To the Editor of the Medical Gazette.

SIR,

IN your notice of Mr. John Northon Thompson's Pamphlet "On Blindness from Cataract," in your No. for July 24, you have fallen, inadvertently no doubt, into the error of attributing *priority to him* as it regards the recommendation to perform an *early* operation for the cure of that disease. You will find, on reference, that such practice was inculcated some years ago, in a work "On the Nature and Symptoms of Cataract, and on the cure of that disease in its *early* stages, by a mode of practice calculated to prevent the occurrence of blindness, and to render unnecessary the operations of couching and extraction, by John Stevenson," &c., &c. From your well-known liberality, and disposition to give merit where merit is due, I have no doubt you will do justice to Mr. Stevenson, by rectifying the mistake as soon as possible.—I am, sir,

Your obedient servant,

A SUBSCRIBER.

Nottingham, July 27, 1840.

COURT APPOINTMENTS.

Buckingham Palace, Aug. 11,

His Royal Highness Prince Albert has been pleased to appoint—

Sir James Clark, M.D. F.R.S., and Henry Holland, M.D. F.R.S. to be Physicians in ordinary to his Royal Highness.

John Forbes, M.D. F.R.S., and Theodore Gordon, M.D. Deputy Inspector General of Hospitals, to be Physicians extraordinary.

Sir Benjamin Brodie, F.R.S., Benjamin Travers, F.R.S., Chas. A. Key, Esq. to be Surgeons in ordinary, and Alex. Nasmyth, Esq. M.R.C.S. to be Surgeon Dentist.

RECEIVED FOR REVIEW.

A Practical Work on the Diseases of the Eye and their Treatment, medically, topically, and by operation. By Fred. Tyrrell, Senior Surgeon to the Royal Ophthalmic Hospital, &c. Vols. I and 2. Churchill, 1840.

ROYAL COLLEGE OF SURGEONS
IN LONDON.

LIST OF GENTLEMEN ADMITTED MEMBERS

Friday, July 31, 1840.

R. B. Newhouse.—J. S. Evans.—C. T. Weston.—J. G. Mitchell.—W. J. Dunsford.—N. Blythe.—T. Marchant Tomkin.—S. M'Morris.—Evan B. Jones.—J. Lister.

Tuesday, Aug. 4, 1840.

E. O. Wildman Whitehouse.—T. H. Black.—W. D. Blades.—R. R. Shillitoe.—A. Tucker.—J. Fox.—G. Smithwaite.—A. B. Middleton.—J. Beavor.—E. S. Emmott.—J. Davies.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED
CERTIFICATES.

Thursday, Aug. 6.

C. E. Firth, Warwick.—H. Powell, London.—W. Smith.—W. M. H. Day, Bristol.—W. Angas, Newcastle-on-Tyne.—W. H. Fife, Newcastle-on-Tyne.—J. D. Hewson, North Shields.—J. King, Liverpool.—W. J. Lomax, London.—T. Jacob, Cardiff.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

<i>August.</i>	THERMOMETER.		BAROMETER.	
	from	to		
Wednesday 5	53	73	30.08	30.02
Thursday 6	56	80.5	29.98	29.96
Friday 7	60	77	29.95	30.01
Saturday 8	56	77	30.05	30.15
Sunday 9	49	78	30.17	30.14
Monday 10	52	70	30.04	29.80
Tuesday 11	53	70	29.60	29.55

Wind N.E. on the 5th and three following days; N. on the 9th; S.W. on the 10th; S.W. and W. on the 11th.

Except the mornings of the 5th, 8th, and 11th, clear. Raining very heavily during the morning of the 11th.

Rain fallen, .125 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, AUGUST 21, 1840.

LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

INJURIES OF THE HEAD, *continued*.—INFLAMMATION consequent upon. *Its Nature and Treatment*.—THE OPERATION OF THE TREPAN. *Circumstances under which its employment is justifiable.*

INFLAMMATION OF THE BRAIN, OR ENCEPHALITIS.

INFLAMMATION of the brain itself, or of its membranes, may succeed to many of the injuries of the head to which I have directed your attention; from a simple wound of the scalp to the most complicated fracture of the skull; from the slightest extravasation of blood to the presence of the most irritating foreign body. It may be excited at the moment of an injury, or it may supervene in the first, five, or six days; in either case it may be directly caused by the injury: it may not be developed before the tenth to the fourteenth day, and is then a secondary affection, consequent upon, but not actually produced by, the injury itself. It may not be manifested for months; and then it is usually caused by a spicula of a bone, or other foreign body. Paré thought a hundred days not an uncommon period; and that the later the period the more serious. It may be acute, passing rapidly through its different stages, or it may be excessively slow and obscure in its course; but, in either case, it is too commonly fatal. It is in itself an extremely grave affection, but most so, because of its pro-

ducts—a sero-purulent, or purulent fluid, which may compress the brain. When it affects the membranes, it is usually extended over a considerable surface, and this circumstance almost destroys any chance of relief from the use of the trepan. When it is confined to the brain it is often circumscribed, and gives a greater opportunity of relief.

Inflammation of the brain and its membranes may, altogether, be regarded as the most formidable complication of injuries of the head. At first, we ordinarily see the symptoms of concussion; they may be followed by compression, and then those of inflammation. Boyer thought that, *cæteris paribus*, the symptoms of inflammation supervening on concussion are much more grave than those produced by contusion, and that those from contusion are more fatal than those from wounds, or from a foreign body, which can be easily removed.

If you were not aware that inflammation is often set up after many days, you might, too soon, allow the patient to resume his ordinary occupations, and in the midst of them the symptoms of encephalitis would be developed. The cases in which it has occurred when the medical attendant has dismissed his patient are by no means rare. Sometimes, indeed, the wound only affects the soft parts; there has been no concussion; nothing excites suspicion of its being more than a simple wound; but, in a fortnight, a mortal encephalitis is developed: this inflammation, however, is more probable when there has been concussion; still more so after compression.

Petit had great apprehensions, as to such cases, in children, because they have no fears from the accident; they dread to say any thing about it; and if a servant be in charge, she often says nothing about it, lest she should be blamed for inattention; and when cerebral symptoms are developed, they may be mistaken for

those which precede eruptive fevers, or accompany dentition. Of these things you must by no means lose sight, because cases are on record where a child has had a fall; cerebral symptoms, which accompany the above mentioned diseases, supervened, and where they have been conceived to be a consequence of the fall, and the trepan has been used. Twice Petit stayed the hand of the operator when the symptoms were consequent upon dentition; once when they were the precursors of an eruptive fever.

Symptoms.—It is almost impossible to see a case of encephalitis, as a consequence of a wound of the head, without meningitis; therefore the symptoms of these two affections are almost always combined. Thus, to an intense headache, vomiting, excitement of the intellectual faculties, and delirium, are added, stupor, with excited sensibility, contractions, and convulsions; we may observe languor, depression, coma, paralysis; the pulse may be, at first, quick, small, and hard; afterwards, full and slow. The carotids beat strongly: it is this beating, with that of the temporals, the redness of the eyes, and the livor of the face, which induce us to suspect inflammation, even before the symptoms of concussion may be dissipated. Then the symptoms of nervous excitement may proceed, in company with opposite symptoms, and the latter may succeed them; this is probably because there are points of the brain which are only irritated, or excited by the affection of the membranes. I have already stated that some persons believe that the symptoms fairly indicate the affected point; but observation has proved the contrary. Thus Foville and Pinel-Grandchamps, some years ago, maintained that, when one arm is affected, the optic thalamus of the opposite side is the seat of disease; when one leg is affected, the corpus striatum of the opposite side is diseased. Cazes believed, that facts proved that isolated paralysis of the tongue indicated disease of the cornu ammonis. Bonillaud thought the loss of memory of things indicated disease of the anterior lobes of the brain. No doubt it looks imposing to be able to point out the exact seat of disease, but I advise you not to rely greatly upon it, or you will be very often disappointed.

I have already said that rarely does inflammation immediately supervene on concussion, or follow, uninterruptedly, compression from a clot; there is almost always an interval. It is sometimes when the patient thinks himself quite well that the first pains of inflammation are felt. If there be a wound of the scalp, it is on the point of healing, when, suddenly, a new pain is felt there; at first it is limited to

that point, but gradually it extends to the whole head. There is languor, moral depression, vertigo, vomiting, pulse quick and hard, sleep rare, and agitated; the face is animated and injected, and the heat of the surface is increased; but, for many days, the symptoms are equivocal. However, unless we find that there has been very improper food taken, there can be little doubt of the supervention of encephalitis. Soon the pain of the head increases, the cerebral functions are disturbed, the sensibility is so excited that the least shock causes painful subsultus, the eye cannot bear the light, the most familiar odours are impatiently borne, the ear is painfully affected by sounds, the patient is irascible, the sleep is troubled by unpleasant dreams, the taste is depraved, the appetite is capricious or lost; delirium continues, interrupted only by sighs and groans; the countenance becomes more animated, the eyes haggard, the vomiting more frequent, the pulse becomes harder, the heat and the anxiety increase, the tongue is dry and cracked. At last, the patient, perfectly unconscious of all around him, relaxes into a state of continual agitation; his hands are frequently directed to a particular part of the head; the eye is fixed, the pupil contracted, the pulse irregular, the stools involuntary, the teeth grinding. If he^{*} does not sink at this period, symptoms of compression come on, and predominate over the others; the coma is more decided, the delirium is less violent or ceases altogether, the heat of the surface is frequently abated, rigors occur irregularly, there is a clammy cold sweat, especially on the forehead, the pupil is large and immoveable, and the patient glides towards the bottom of the bed as if pushed down. It is at this time that the smell of mice is usually perceived, and that paralysis of one side of the body is discovered, with convulsions of the other, or a permanent state of contraction, in which the muscles of the back not uncommonly participate: the neck is rigid, respiration is laboured, but becomes slower, interrupted, and at last ceases, with or without tetanic spasms.

These symptoms succeed each other with more or less rapidity; the entire course of the disease is usually from six to nine days, but it may not exceed three or four from the occurrence of the pain of the head. The rigors and lethargy may succeed immediately upon the equivocal precursory systems: we have seen patients die with all the comatose symptoms which ordinarily terminate inflammation of the meninges, in whose brains we have found no effusion of any kind.

There are local anatomical characters which indicate what is going on within

the cranium; we have already spoken of them. If there be a wound it assumes the character we spoke of; the bone is denuded, it presents the appearance of necrosis. If there be no wound, at the injured point there is pain; and a tumor, such as that described by Pott, may be developed. If, by the trepan, or after death, we expose the dura mater, we find it brown or blackish, and easily destroyed. In consequence of this circumstance much importance naturally attaches to the separation of the pericranium.

Treatment.—The principles upon which inflammation of other organs is treated are entirely applicable to that of the brain; but they should, in that case, be very energetically employed. Among the means to be used, practitioners, in all times, seem to have regarded blood-letting as the most important; but all are not equally agreed upon the vein which should be opened; some say those of the arm, others the jugulars, others those of the feet; and others rely greatly upon the wisdom of opening the temporal artery. My advice is, that you should take blood where it can be most readily procured, the arm; but I see no objection to open the jugular vein, or one of those of the feet, provided the quantity taken be sufficient; you should never rely alone upon local abstraction by cupping or leeches; they are good auxiliaries, but ordinarily insufficient as principals; and section of the temporal artery is not always free from inconvenience, particularly that of compression for the purpose of restraining hæmorrhage. Many modes of abstracting blood have been practised: some are content with bleeding in proportion to the urgency of the symptoms; others think it best to anticipate them. In a case mentioned by Paré, he bled to the extent of 27 *palettes* (a measure of 4 ounces). Petit proceeded still farther; he felicitates himself upon the result of a case in which a young nobleman was thrown from his horse; two medical practitioners were opposed to a seventh bleeding; he insisted on it, and saved his patient. The custom of the present day, in our country, is to bleed largely when any symptom indicates the necessity of abstracting blood; but we do not wantonly take it several times when there are no symptoms to indicate the necessity. Instead of pursuing this system, Gama thought it best to keep up a continued abstraction, by applying leeches, and supplying the places of those which came off. His plan is, when there is a wound, and strips of plaster are used to bring it together, to apply, according to the gravity of the symptoms, twenty or thirty leeches between the strips, and as the bleeding from their bites begins to lessen, to apply

others; and this plan was to be continued from two to six days if the symptoms required it. He believes that in this way a sufficiently large quantity of blood may be taken without producing an equal degree of debility with general bleeding. My opinion is formally opposed to Gama. I believe that when the symptoms of encephalitis are sufficiently developed to render the abstraction of blood necessary, that the system should be quickly prostrated by a prompt removal of a considerable quantity of blood, so as to cut short the progress of the disease. I most readily admit that in some cases twenty or thirty leeches will produce faintness; but it is a faintness from which the system soon recovers, and in many cases fifty or sixty applied at the same time will produce none. The disease will insidiously steal on, its symptoms masked by these bleedings, and ulterior mischief will be very likely to follow. When Gama considers the loss of blood to be sufficient, he lessens the number of leeches by a third, until no more are necessary; he then places certain increasing intervals, such as 24 and 48 hours, between the applications, until he entirely discontinues them. In this way, he says, the treatment continues from eight to fourteen days, during which he conceives the most important principle to be the continued abstraction of blood. He prefers to apply the leeches as near the wound (if there be one) as possible; next to that he prefers the forehead and temples; he does not approve of the mastoid region, or that of the neck.

With blood-letting we associate rigid diet, and antimonial or other purgatives. When by this mode of treatment we have failed in subduing the inflammatory action, it is very rarely that other means will succeed. Desault urged, and most surgeons have experienced, the good effects of tartar emetic; he gives cases in which he thinks, in the last period, even where there was extravasation, it has saved life.

Another very important plan is cutaneous counter-irritation by blistering; it may be applied upon the head itself, upon the back of the neck, or upon the limbs; but practitioners are much divided in opinion as to the wisdom of using blisters in the first period of the disease, from an idea that they may exasperate the already-existing inflammation.

In various modes *cold* has been applied to the head, for the purpose of restraining the inflammation of the brain. Schmucker, who was a very strong advocate for the system, used a mixture composed of four ounces of nitrate of potash, two ounces of ammonia, sixteen ounces of vinegar, and ten pints of water. Other persons have

used cold water by way of lotion or irrigation; others have used evaporating lotions; and others ice. I have often admitted the powerful sedative effect of cold, but I have always maintained that it is a double or quits remedy; that if it do no good it may do much harm: that if the sedative effect be not maintained, decided reaction may follow. Associated with blood-letting, and properly watched, it is unquestionably an agent of considerable value.

When, under the influence of treatment, the inflammatory action still persists, with symptoms of compression, the question of applying the *trepan* upon the injured point arises: the object of applying it is to evacuate the products of inflammation which give rise to the symptoms of compression. But what is the state which justifies a recourse to the *trepan*? A strong conviction that those products exist, and that they are producing the cerebral symptoms attributed to compression, coma, and paralysis: but then these symptoms may be produced by meningitis or disease of the brain, such as softening; in that case the *trepan* would be useless, or worse. It is also necessary, before the *trepan* is applied, to ascertain the exact seat of the morbid product; and this is in many cases by no means an easy matter. It may be between the dura mater and the cranium, between the layers of the arachnoid, under the pia mater, or in the substance of the brain. The existence of a denuded point of the cranium, consequent or not upon a wound, and the paralysis of the opposite side, indicate with tolerable certainty that the extravasation is beneath that point. But, though we may be right in that, we cannot determine either the depth or limits of the compressing agent: neither can we in all cases ascertain its nature, or whether it be susceptible of absorption. Even supposing we have made out the existence, the seat, the limits, and the nature of the extravasation, it is important to ascertain whether there be inflammation; whether the functional disorder do not depend upon this condition, rather than upon its products. These are among the difficulties which will assail you when the question of the *trepan* arises, and unless you can resolve them you should abstain from operating. It is astonishing to us in the present day that the older surgeons so readily undertook this operation; but it is not less astonishing that in the present the *trepan* is rarely used. Certain it is that in a large number of desperate cases success attended its employment: whether that success was consequent upon the ancients using it as a preventive method, employing it as soon as they ascertained that a fracture, or even a contusion of the bones of the cranium existed, before inflammation was de-

veloped, I do not know, though I incline to the opinion that it was. Although, in frequent instances, this may have been their rule of action, in other cases they used it to relieve compression. When success attended the operation, it was usually done for the removal of a spicula of bone: when it was performed to remove some fluid on the surface or in the substance of the brain, the cases of success were comparatively rare. Still, when, under the influence of blood-letting, rigid diet, emetics, cathartics, and cold in the first or acute period, and associated with counter-irritation in the second, the inflammatory action is not dissipated, and symptoms of compression are urgent, whether there be a wound or not, we are justified in applying the *trepan* where the blow was struck and the pain is felt, provided the result of compression be exhibited on the other side. By this operation we may sometimes remove the causes of inflammation, if it consists of a spicula of bone, and it allows of the evacuation of purulent matter if it exists. Some surgeons have attached great importance to the operation in such cases, by its occasionally affording facilities for taking blood from the sinuses, but you had much better take blood from a vein elsewhere than incur risk from opening a sinus.

As to the chronic or sub-acute inflammation, which is developed occasionally long after the injury, it is often possible to prevent it: for this purpose, in all cases of injury of the head, the scalp should be well examined; the patient jealously watched, and subjected to a severe antiphlogistic treatment: cold should be applied for some time, and tolerably copious action of the bowels kept up. But when symptoms of inflammation of the dura mater are marked, cut down through the pericranial tumor, and use the *trepan*. If, however, there be reason to think that the inflammation extends far, it will be worse than useless. We must never, however, lose sight of the circumstance, that certain conditions of the abdominal viscera may give rise to phenomena analogous to those of inflammation of the brain, and that emetics and purgatives may dissipate them.

THE TREPAN.

To point out the cases and circumstances under which it is prudent to use the *trepan* is almost impossible; still it is necessary that I should endeavour to lay down some rules for your guidance.

Practised from a very early period, strongly supported by one party, and as strongly repulsed by another, probably no operation in surgery has been so keenly discussed, from the time of Hippocrates to the present day, as that of the *trepan*.

And this is not wonderful, when we consider the frequency and gravity of the diseases for which it is proposed as a remedy; the importance of the affected organ; the almost miraculous effects which sometimes follow its use. These circumstances sufficiently explain the rank which it holds among the operations of surgery. That no definite judgment has been pronounced upon it, the numerous essays upon it, by celebrated men, are at the same time a sufficient proof, and a reason why we should approach the subject with much diffidence.

The earliest data which we possess upon the subject are those of Hippocrates; but no one can read his observations without being convinced that the operation was practised before his time. It is, therefore, at this time of day, rather humiliating to subscribe to the opinion of Metzger, (*de lésionibus capitis*): "*Si capitis læsionum, quæ exstant fide dignissimus historiarum attento animo perpendere velis, intricatissimum sanè hic intrabis labyrinthum.*"

Hippocrates considered the trepan as the last resource; to be used, rather than abandon the patient to certain death. Celsus taught that still more reserve should be shown in its use. Archigenus recommended its employment in many cases. Galen, as in most cases, remains faithful to the doctrines of Hippocrates. Albucasis modified the instrument to a certain extent, but made no change in the employment; and for a long period it seems to have been almost forgotten, or at least left in the hands of those quacks termed "*circulatores.*" Beranger trepanned for the purpose of raising a depressed bone, which compressed the brain, or irritated the dura mater. He trepanned over the temporal bone, spite of Galen's interdict, and over the sutures, although Hippocrates condemned it. Although Paré adopted the maxims of Hippocrates, he did not servilely follow them; he showed that vomiting and coma, though regarded as signs of fracture, might exist without it, and that fracture might exist without these symptoms. Fabricius ab Aquapendente proposed that the trepan should be used whenever the opening was insufficient to allow of the escape of sanies. From the time of Dionis, the trepan was used in France not only in all cases of fracture, but even in cases of simple denudation. Petit sought to distinguish whether the symptoms were owing to concussion, to compression, or to inflammation; which, since the time of Hippocrates, was the most important circumstance connected with the trepan. Quesnay maintained that it was unnecessary to trepan for primary accidents, and that it should only be used in compression and inflammation. About the same time Pott entered upon the question, and was dis-

posed to recommend it in a very large proportion of cases of wounds of the head. Heister objected to its use unless the symptoms were very pressing; so thought B. Bell and Morgagni, who says, "*ut injustum sit illud præter modum abhorre.*"

Taking the opinions of the greatest modern authorities, we find that Desault, Richter, Abernethy, A. Cooper, Brodie, Langenbeck, Walther, and Dupuytren, thought that its use should be greatly restrained; they only advised its employment in consecutive accidents, such as irritation and secondary compression, if manifested with a certain intensity. Pott, Sabatier, Louvrier, Mursiana, Zang, Schindler, and others, employed it more generally, not only when consecutive accidents were declared, but in all lesions where, in consequence of the structure of the parts which protect the brain, consecutive accidents were to be apprehended.

The former base their opinions upon the following facts:—"Experience shows that fractures of the cranium, with or without depression, are frequently cured, whether the bones be elevated, or the brain has become accustomed to their compression;" therefore, say they, the trepan should not be used until consecutive symptoms are urgent. Again, experience has demonstrated that extravasated blood may be more or less completely absorbed; that the operation of the trepan is not without danger, for to a serious existing injury is added a new one, whose consequences may be very serious; that exposing the membranes of the brain is a very serious though necessary part of this operation; that if inflammation be developed, the brain may project through the opening made in the bone; that the dura mater may be ulcerated; that fungous excrescences may form, (Abernethy). To these objections the answer is, that the internal table, in consequence of its brittleness, is more liable to fracture than the external; that radiating fractures, with detached spiculae, usually extend farther along the inner than the outer table; that the vessels which unite the dura mater to the cranium are frequently destroyed, and occasion extravasation of blood; that if it be admitted that these accidents in wounds by contusing bodies supervene with as much more certainty—that in all these injuries the diploë is so contused that inflammation and suppuration almost necessarily follow—we must see that the absence of compression and irritation ought not to inspire us with confidence; that when these symptoms are developed, the brain and its coverings are already altered, so that the operation can only be regarded as a powerful therapeutical agent, which under those circumstances has not fair play: the same remarks apply to

extravasations of blood, for if the surgeon deceives himself with the hope of absorption, and postpones the use of the trepan to the moment when the symptoms are developed in all their energy, we have the probability that violent inflammation may attack the brain and its membranes, and that the trepan offers then small chance of safety.

We cannot deny that fractures of the cranium, with or without depression, may in some cases do well; we may even admit, that of ten cases trepanned under the circumstances before stated, two might have been cured without the operation, though of this there could at the time be no certainty. But when consecutive accidents are developed, the trepan is fatal in a large majority of cases. The operation of the trepan is not of itself dangerous; and if the consequences are regarded with so much apprehension, it is because it is seldom applied except in desperate cases.

Sir A. Cooper thinks that it is indicated only when blood is extravasated between the dura mater and the cranium; in fractures complicated with compression, if not relieved by blood-letting; in fractures with depression, even when there is no wound of the integument, if the symptoms of compression persist; in cases of purulent effusion. He thinks also, that while there is a simple fracture, with a denuded cranium, or depression, the case is very dangerous. He advises that when a spicula of bone is pushed into the brain, but produces no sign of compression, that we should not seek to remove it, because we shall very probably produce extravasation, and favour the development of acute inflammation. Yet he proves how uncertain are his data, when he says: "In complicated fractures ordinarily inflammation is manifested; it is necessary, therefore, to trepan before it is developed, for afterwards the operation would be useless; it will even aggravate the patient's condition when inflammatory action is already developed." Brodie's opinions are similar.

In the course of treatment of a wound of the head the trepan may be indicated; when irritation and compression of the brain are manifested, and the symptoms do not abate under appropriate treatment, and we are certain of the point upon which violence has been inflicted, and when the products of the wound have no free exit, the diploë being affected, and the dura mater detached.

In estimating the operation, the pain and apparent cruelty need scarcely be taken into account; they are much less than those of many other operations. Its dangers, what are they? not great. It is said, the saw may open or lacerate the dura mater. If we argue in that way the simplest operation may be made formidable; those reproaches attach to the operator,

not to the operation. The action of air, what have we to fear from it? In many cases the wound already exists. If the air be so injurious as some persons think, it must be equally so in wounds of the head, with loss of substance; yet the impression is very general, that inflammatory complications are in an inverse ratio with the dimensions of such wounds. No doubt many persons die after the operation of the trepan, but why refer this to the action of air rather than to other causes? My own opinion is, that the action of air has nothing to do with the accidents which follow the operation; that its dangers have been much exaggerated; and that, as an operation, it is not in any way difficult. It is simply in determining the exact point upon which it is to be applied that difficulty is experienced. But that is nothing as against its absolute value; it is only a proof that the diagnosis of surgical diseases of the cranium is far from perfect.

As in many other questions, the great diversity of opinion on this subject is mainly owing to the absence of precision in the indications, and an incomplete analysis of the principal phenomena determined by wounds of the head. In most cases the signs of concussion and of inflammation have been confounded with those of compression; the evidence of this is contained in the works of Pott and Dease, Sir Astley Cooper, Richter, Zang, Quesnay, and Desault. The doctrines of Pott were opposed by Dease, whose ideas were espoused by Desault; analyse their facts, and you will see that the attacks on the trepan were not justified.

Dease having lost the patients he trepanned, tried severe dieting. This he found equally fatal; while he saw persons who were careless about diet often do well. From this he concluded, that in cases of simple fracture and contusion it was unnecessary to trepan. Of his twenty-five observations, twelve were cases in which there were contused wounds and a denuded cranium *without fracture*; almost all resulted from contusing bodies. Of these twelve cases eleven were trepanned; in the twelfth the operation was proposed on the fifteenth day, but opposed by the consulting surgeon, and the patient died on the twenty-second day. Of the eleven who were trepanned nine died, two were cured. Three were trepanned before the tenth day; three from the tenth to the fifteenth; five after the fifteenth. In any case the accidents were not manifested before the seventh day, nor later than the nineteenth day. The symptoms which served as indications were, eleven times, rigors; in one case only were the rigors wanting. Dease believed they must have been present in this as in every other case he saw, but were forgotten by the patient.

With rigors there was an irregular pulse; more or less intense headache, followed by delirium. In all cases the trepan was applied upon the denuded point.

Eleven were cases of wounds *with fracture*; nine produced by swords, one by a watchman's staff. Of these, in eight the trepan was applied, six times before the third day; and of those six cases four were cured. In all the cases the patients were largely bled and purged.

It would seem from these results that cases of simple contusion of the cranium are more grave than those with fracture; for of twelve cases without fracture ten died, while of twelve with fracture only four died. As in the first cases the operation was not performed before secondary accidents were developed, whilst in the second series it was, in most of the cases, performed before the manifestation of any bad symptom, we are justified in concluding, against the opinion of Dease, that the trepan, applied early, is successful.

Perceval Pott, one of the most accomplished surgeons this country has produced, was qualified for the task of estimating the real value of the operation of the trepan. He based his observations on twenty-eight cases of wounds of the head, in all of which he applied the trepan. In nine, to obviate accidents which accompanied or followed contusion of the cranium, and separation of the dura mater; in one to remove a spicula of bone; in ten cases to relieve the accidents of fracture without depression, and in five cases those of fracture with depression; in three cases to relieve the patients from the consequences of extravasation of blood within the cranium. Of the nine cases, five recovered, four died; of the ten cases, six recovered, four died; of the five cases, two recovered, and three died; of the three cases, two recovered, one died.

We are therefore, I think, justified in assuming, that Dease did not well understand the indications for the trepan, and resorted to the operation when it was improper. He lost the greater part of his patients; and, instead of referring his want of success to error in judgment, he referred it to the operation, and rejected it as a dangerous and almost useless resource. Pott, on the other hand, resorted to the operation when nature indicated the necessity for it, and succeeded fifteen times in twenty-eight cases, and showed that the operation had little to do with the loss of the remaining thirteen.

Whilst Pott in England, and the Academy of Surgery in France, pointed out the advantages and the necessity of the trepan, they seemed to neglect to point out the cases in which it was applicable; so thought Abernethy, Desault, Dease, and

John Bell. Abernethy sought to supply the deficiency. He said, that fractures without depression, as well as fractures of the cranium with slight depression, are susceptible of cure without the trepan; that the bone will rise up, or the brain will accommodate itself to the compression. He mentions many observations in support of his opinion. In his second case the depression was to the extent of a quarter of an inch; but whoever reads his too shortly described cases, will come to the conclusion that, in some of them, the operation might have been used with advantage. He admits that where there is considerable depression the trepan should be employed. "If there be much extravasation, it should be used; if not, we may wait." In concension he thinks the operation inapplicable. His conclusions are, that of seven cases in which the trepan was employed two did well; of eleven others, consequences of fracture, or inflammation, in which probably Pott would have operated, but he did not, three died, and eight recovered. John Bell, Hennen, and Sir A. Cooper, more strenuously opposed the trepan. J. Bell rejected it as a dangerous operation, but admits its necessity when pus is effused at the surface of the brain, or when compression is produced by blood or by bone. Sir A. Cooper does not base his formidable opposition on any conclusive fact or reasoning; he objects even to shaving the head, unless the necessity be obvious; and so do we. If, says he, the fracture be complicated, and inflammation supervene, death will follow, whether you trepan or not. He excludes the operation in all cases except where evacuants have failed, and there is decided compression. Hennen admits only two cases in which it should be employed. Fracture with depression, or complicated with a ball or other foreign body, which cannot otherwise be removed; and urgent symptoms of compression, without fracture. There is, in such cases, a difficulty in determining the point. Of Hennen's eight cases of fracture, from gun-shot, three were trepaned—one death: two were not trepaned, but spiculæ were removed—one death: one, ball extracted, bone depressed, but left to itself—cured: two, treated without trepan, and without removing spiculæ—cured. Of the eight cases five were cured; and among those trepaned two were cured. Richter's opposition to the trepan is much more strenuous than that of Dease. The first volume of Schmucker's Surgery contains fifty cases of wounds of the head received at the siege of Schweidnitz. The first twelve cases were apparently comparatively unimportant wounds; but the result of treatment was so very unfavourable, that he deter-

mined to use some new method: he resorted to the use of cold water: but any one who is at the pains to look through Schmucker's cases must feel that there is much want of ability to appreciate the cases in which particular modes of treatment are indicated.

Chelius, and many other German surgeons, are warm partisans of the trepan. He employs it in all cases of fracture, with or without depression; in penetrating wounds, and disjunction of sutures. Graefe and Schneider strongly opposed its use in almost every case. But, of the German works on the subject, Schindler's is the most remarkable. He says, as in fracture or fissure of the skull the life of the patient depends upon the timely use of the trepan, I place, as a principle deduced from several hundred observations, that whatever may be the form of the lesion of the bones of the cranium, whatever be the form of the instrument by which the injury is done, we ought at once to expose the part, and ascertain the extent.

When the bone and the diploë are much injured, even the opponents of the trepan maintain that immediate recourse should be had to it. If there be fracture, with depression, there is less accord. Surgeons may, then, be ranged in three groups: among the first, who would trepan before they have tested ordinary therapeutical agents, are Desault, J. Bell, S. Cooper, Richter. Among the second are Celsus, Benjamin and C. Bell, Hennen, Abernethy, Richerand, Larrey, Himly, Langenbeck, Dzondi, and Graefe, who do not resort to it until "cerebral symptoms" are developed. The third group includes Petit, Heister, Pott, Louvrier, Mursinna, Zang, Chelius, Klein, Rust, Walther. They see, in depression, an indication for the trepan, and employ it whenever it occurs.

I think it must be admitted that the almost entire abandonment of this operation, in this country, at the present day, is as senseless as many other changes with which fashion has something to do. The operation has had this disadvantage—it has been employed indiscriminately, and where death has followed it has been referred rather to the trepan than to the accident: and, on the other hand, many bad cases have done well without it. "Therefore," say many, "it is at least useless." We have no right to assume, because an apparently desperate case has got well without it, that we were justified in neglecting to use it, or to say that the operation was not the proper—the appropriate remedy. As well may we say, because a case condemned to amputation got well without it, that, therefore, amputation was not the proper remedy. Supposing we leave twenty such cases to themselves,

and five get well; supposing, in twenty others, amputation be performed, and we save twelve; would the five limbs saved in the first case compensate for the loss of seven lives in the second? Many cases, requiring the trepan, are, in appearance at the moment, slight; others are more serious; others very urgent. If, in the first, we operated early, the results would naturally be favourable. If, on the contrary, we wait until bad symptoms appear, the results would be very unfavourable.

In speaking of this operation, therefore, something more is necessary than to say I have employed the trepan so many times with such results. The rules which I propose to lay down for and against the use of the trepan are as definite as the subject admits of; but the exceptions to them may be many. The indications for the use of the trepan are, wounds of the head, with contusion of the bone, and separation of the pericranium and the dura mater, when of limited extent. Necrosis, of limited extent, affecting the entire thickness of the bone. Fractures, without depression or spiculae, when there is much contusion or extravasation between the cranium and the dura mater. Fractures with depression, unless the depression be slight, and without evidence of compression. Foreign bodies, when so situated as to be removable by surgical means. Extravasation, of whatever kind it may be, whenever the signs of compression are so clear and so severe as to threaten life. In some cases where, upon a point formerly injured, a fixed pain persists, and produces cerebral disturbance.

Counter-indications are presented when death seems near, and the bronchial tubes are obstructed by mucus; when the contusion is slight and uncomplicated; when the fracture is situated at the base of the cranium; when the fracture is simple and uncomplicated; when foreign bodies, though present, cannot be discovered; when there is reason to think that an extravasation of blood or pus is not limited; when the symptoms are evidently those of concussion; when there is general inflammation of the brain; when the patient is affected at the same time with some other, probably, mortal disease.

It is important to keep in mind that all regions of the cranium are not equally eligible for the application of the trepan. Many surgeons hold that it should not be applied *over sutures*, because the dura mater is too intimately united to the cranium at these points, and because they generally correspond with venous canals which may be endangered by the operation, and because extravasation between the dura mater and the bone scarcely ever happens at these points. These circumstances are

entitled to have a certain weight attached to them; but, in case of necessity, they must not prevent our applying the trepan at these points. If there be necrosis, separation of the dura mater, extravasation, a foreign body, a fracture, or a contusion, the operation is scarcely more dangerous, and little more difficult, than in other parts; it is true it is rarely done, but that is because the occasion is rarely presented. Over the *venous sinuses* many persons have objected to apply the trepan, fearing hæmorrhage; but those fears are exaggerated, because so inert are they that a very little pressure would restrain it. Champion removed from a child's skull the superior two-thirds of the occiput: at the moment of removing it, a spicula fixed in the membranes; he opened a sinus; the blood spouted out to the distance of two yards; he placed a bit of lint on the point, held it there for a few minutes, and the hæmorrhage ceased. Cheselden, in a wound of the longitudinal sinus, restrained the hæmorrhage by similar means. A variety of instruments have been invented for the purpose of restraining hæmorrhage of this kind. Some surgeons have regarded a puncture of a sinus with less apprehension—have proposed it as a therapeutical agent in bad cases of concussion (Leveillé.) Hoffman actually employed it. But it is easy to trepan over the sinuses without wounding them, and, if necessary, it should be carefully done. The region of the *frontal sinuses* is more objectionable, in consequence of the great distance which occasionally exists between the two tables at these points. Verheyen feared the wound would remain fistulous. Quesnay thought that, if necessary, these objections must not have too much weight. There are on record cases where no fistula followed. Among the moderns, Larrey has done it twice without serious inconvenience. But the operation must be to a certain extent modified. It has been recommended to apply a large crown over the anterior wall, and a smaller one over the posterior, but certainly it is a region that must not be selected without absolute necessity. Again, the temporal region is proscribed because of the necessity of cutting through the temporal muscle; this is a serious proscription, because this region is precisely the one where the trepan is most frequently useful. However, the trepan has been frequently applied, and with occasional success, in this region. Over the meningeal artery the operation has also been proscribed; certainly, if it be done, the chance of wounding the artery is considerable; but then the hæmorrhage has rarely been great, and in most cases has been quickly arrested. For this purpose

Larrey twice employed successfully a red-hot needle. I know of no case in which the wound of this artery, in the operation of the trepan, has caused death. The *occiput*, from the unequal thickness, and the contiguity of the sinuses, must be trepaned with caution, but, if necessary, there is no insurmountable obstacle to its performance. If applied low down, the soft parts to be cut through are rather thick, the splenius and complexus interfering; there are, however, many examples of success even there. As to the *base of the cranium*, the only region where we are not justified, under any circumstances, in attempting it, is that around the *sella turcica* and that of the *ethmoid*.

In all serious injuries of the head the scalp must be shaved, to enable us to ascertain the points implicated, as well as their probable extent. If the symptoms are pressing, if the bone be not laid bare, we do it with reserve, bearing in mind the necessity of placing the parts in the most favourable circumstances for cicatrisation. With this idea some persons make a ∇ , others a T, others a semi-elliptical or semi-circular incision, and some prefer a simple longitudinal incision; but this could only make room for a single crown. The head of the patient should be conveniently placed in a good light, the integuments should be made tense with the finger and thumb of the left hand, and the necessary incision made boldly, if there be no fracture; cautiously, if there be: the pericranium must be fairly incised and detached where the trepan is to be applied. We then project the centre piece, and perforate the bone so as to fix the crown, which must rest perpendicularly to the surface of the cranium; we then cause the crown to revolve until it has made a gutter deep enough to maintain the instrument, when the perforator may be withdrawn. From time to time the crown must be removed, the teeth brushed, and the furrow in the bone cleaned out with a feather, and with the quill end of the feather we ascertain whether, at any point, the bone has been cut through. As we get deeper we press more lightly, and incline the instrument to the side where the gutter is most superficial. In this way we proceed until there is penetration at several points of the circle, and the disc is moveable under the left indicator nail; then by inclining the trepan to either side we often detach the disc and bring it away: some persons prefer using a bullet screw for the purpose. When removed by either means, if there be at the circumference any sharp spiculæ, we remove them with the lenticular. If it be necessary to use more than one crown, we leave between them a kind of bridge, a line or two wide, which can be easily

removed with a Hey's saw: If we do not want the whole space of a second crown, we apply the instrument so that a fragment of the size we wish may be included in the circle. When the operation is achieved, the subsequent treatment depends upon the kind of injury for which recourse has been had to the operation: the evacuation of blood should be favoured by a convenient position, by the application of a sponge or dry lint. If the extravasation be below the dura mater, that membrane may project into the opening made in the skull, and may present a fluctuation and a violet colour. It must be cut down upon; the incision should be crucial. All these matters having been accomplished, the soft parts should be brought together, and the dressing should be very simple: some persons recommend that the disc should be replaced if the bone be healthy, but it is rarely done, and if it were it might form an obstacle to the escape of fluids. A pellet of lint, properly secured, will do better. The patient should be kept very quiet, rigidly watched and dieted; the apparatus should be removed once a day, or oftener if there be much suppuration. When all goes on well the dura mater gradually loses its glistening colour, secretes pus, and is covered with granulations; these are gradually raised, project through the opening made in the bone, unite to those of the integument, and even of the bone itself, and form a solid cicatrix. When matters proceed thus, we use slight compression to assist in producing a firm cicatrix, and the diet may be gradually improved. If the pus assumes an unhealthy character, and if there be no cerebral disturbance, tonics, externally and internally, may improve it. If it be kept up by some irritation, that should be removed; if it be a fragment of bone it should be cautiously extracted.

As so much obloquy attaches to this operation, it may be well to inquire what are the immediate consequences of the use of the trepan. There is usually, when the brain is exposed, a tendency to protrusion, and if the opening be a small one, the protruded portion may be, as it were, strangulated, and present a fungous or cauliflower appearance; but when the opening is large, or when there are many, that tendency is less decided.

Whether the dura mater have been incised or not, a tumor may form and completely fill up the trepan hole: in this tumor the cerebral substance may not be at all implicated. Difference of opinion exists as to the cause of these tumors. Abernethy thought that they were generally formed of coagulated blood deposited in the medullary substance of the brain, and variously transformed. He believed

that most of the tumors described as *hernia cerebri*, and which were considered by Louis as aneurismal, or erectile, were similar tumors. He thought that unless the symptoms were very urgent they should be left to nature. Hill punctured and scarified them. Ficker applied escharotics, and afterwards a ligature, but it was followed by convulsions. Walther recommended enlarging the trepan hole, and if necessary ligature or section.

When the trepan has been used, some persons bring the soft parts together, as in a simple wound; others replace the osseous disc. The ancients used to support the brain by applying a perforated gold or silver plate, but in the present day they are no longer used. In the first mode, the dura mater and the cranial integument unite at the centre of the perforation, the edges of which are gradually rounded or blunted. In the second case, some persons, among them Walther, have believed that the disc is again united and revived. In brute animals this union has several times been seen, and in a case on the human subject, referred to by Walther; but supposing we admit the possibility, of what use is it? When we use the trepan, we often act upon a diseased bone, which it would not be safe to reintroduce. Ordinarily, when the flaps are brought together, the borders of the bone are thinned, and seem to be elongated towards the centre, not absolutely coalescing, and this space never entirely disappears: it may happen that the cranium is flattened, and contracted at the point, as the chest is in empyema; and some faculty of the mind may be interfered with. The bone may thicken at the point. In the museum of Dr. Physick, at Philadelphia, was a skull taken from a young man who had his cranium fractured in a duel; he was trepaned, cured, pursued his ordinary avocations, but died suddenly a year after. It presents around the trepan hole a thick collar of bone, which compressed the brain. That the cicatrix is usually sufficiently resistant to support the brain, is well shown in the following cases:—Pouperinne perforated a skull with a trepan at five points; Pages and Schmucker the same: Spigelius at seven; Solingen, on the Prince of Orange, at seven; Gooch, at thirteen; Chadborn, on the Duke of Nassau, at twenty-seven points. Loyseau states that the King of Navarre, being at Bergerac in 1386, a poor man, wishing to save his goods from some of the soldiers who were quartered on him, fractured the skull of one and left him for dead. Loyseau removed nearly the whole of both parietal bones; after a long time he partially recovered, and for thirty years lived a mendicant. Many cases of the same kind might be mentioned. In some cases, how-

ever, the cicatrix is not sufficiently resistant, and then the same inconvenience may be experienced; a kind of encephalocoele may result. Paré, Lapeyronie, and Larrey, in such a case recommend, in preference to a plate of metal, one of leather or card board.

CLINICAL

LECTURES ON ERYSIPELAS,

Delivered at the Hospital of La Pitié, Paris,

By M. VELPEAU.

Reported for this Journal by J. HENRY BENNET,
B.L. & B.S., Sorbon.

Treatment of Erysipelas—Phlegmonous Erysipelas—Angioleucitis—and Phlebitis.

Treatment of erysipelas.—The treatment of erysipelas is both general and local. We will first direct our attention to the general treatment.

Some diseases are produced by a cause which becomes exhausted in giving rise to the malady. Thus, the inflammation which follows the introduction of a foreign body into a tissue is easily overcome when the cause which keeps up the irritation is destroyed by its removal. In other affections, on the contrary, the cause continues in action for a longer or shorter period after the appearance of the disease. This is the case with erysipelas; but as, unfortunately, we are totally ignorant of the nature of the general cause to which the malady is to be attributed, we have no satisfactory means of attacking it. We well know that erysipelas depends on an alteration of the fluids—innumerable arguments prove that such is the case, but we know not what is the real nature of the disease: we know not what is the deleterious principle which pervades the economy; whether it be this or that element which is increased or diminished. In this instance, reason is powerless, and we are reduced to empiricism, the results of which have thrown, however, little or no light on the subject. Some practitioners advocate tonics; others, purgatives and blood-letting; others, again, look upon nearly every kind of treatment as useless; the great difference of opinion which exists between most of those who have written on the subject shewing at once that no treatment yet proposed is really efficacious. If we study attentively the treatment which men of talent have adopted in various epidemics, we shall find that some employed one class of therapeutic agents, and some another, whilst many did nothing at all, and that, nevertheless, they all succeeded, to a certain extent, in curing

their patients. This, at first, appears strange, but it is easily accounted for by the old practitioner, who has passed through many epidemics of erysipelas, and has remarked the variable physiognomy which the malady assumes, as he finds that his own experience, confirming that of previous ages, justifies the adoption of an altogether different plan of treatment, in some cases, to that which is followed in others. It is certain that the general state of the patient varies exceedingly in different epidemics. Sometimes inflammatory symptoms run high; sometimes, on the contrary, gastric symptoms seem to prevail, the tongue being furred, the abdomen distended, and more or less nausea existing. Epidemics are occasionally seen, in which the patient is in a state of adynamia, the pulse being small, the tongue and skin dry. There are also epidemics of erysipelas, in which there is a tendency to gangrene, eschars rapidly appearing on those parts which support the weight of the body.

It is by these indications that we ought to be guided in the general treatment of erysipelas. Whenever the patient is young, robust, and the pulse is full, great benefit will be derived from bloodletting. If, on the other hand, he is advanced in years, or weak, if the tongue is furred, the skin of a yellowish colour, and there are other symptoms of a disordered state of the digestive organs, recourse must be had to emetics or to purgatives. When there are symptoms of adynamia, especially in old people, bloodletting and purgatives must be laid aside, antispasmodics being then most likely to prove beneficial. In cases of this nature I often give, every day, six, eight, or ten pills, each of which contains one or two grains of camphor, to two or three grains of the nitrate of potass. I do not, however, place much reliance on the efficacy of this prescription.

With regard to general treatment, as directed more especially against erysipelas itself, I have but little to say on the subject. It is very questionable whether any general medicine which has hitherto been proposed is capable of extinguishing erysipelas properly so called. General measures, such as bleeding, purgatives, emetics, &c., may be so far useful as to moderate the intensity of the disease, and prevent its assuming the phlegmonous form, but their efficacy does not appear to extend any further. Statistical accounts have been published, in which the progress of the disease is represented as having been at once arrested, and the disease itself as having been eventually and entirely subdued by general bleeding. But on comparing the date of the invasion of the malady with that of the cure, we always found that it had lasted from eight to

thirteen days, which is, as we well know, the natural duration of erysipelas. General bloodletting is merely a useful means of diminishing the violence of the inflammation, but nothing more; and in many instances it is impossible to resort to it, from the state of anemia in which repeated loss of blood has thrown the patient. No general remedy, indeed, with which we are acquainted, can cure this disease.

Local Treatment.—If the conclusion to which we have come with regard to the general treatment of erysipelas is correct, but little can be said respecting the local treatment; as, however, many practitioners do not adopt this view of the question, I will briefly examine the various remedies which have hitherto been employed in the local treatment of erysipelas. Entertaining the theoretical opinions which I have just brought forward, it is impossible to place much reliance on local measures; you may, however, rest assured, that whatever theoretical ideas I adopt in pathology, they will never prevent my trying, with the greatest possible impartiality, any plan of treatment which may be recommended by other practitioners.

The remedies used in the local treatment of erysipelas are extremely numerous, and this circumstance alone is, to a certain extent, a proof that none of them are very efficacious, although each has numerous advocates. In the history of the local treatment of this disease you will find that there are two periods. Before the eighteenth century, and in the twenty first years of the nineteenth, they were generally condemned. If we consult Pinel, for instance, we shall find that the only topical application he allows is very fine flour, which he merely uses to preserve the parts from the action of the atmosphere, and the friction of the bed-clothes, or a lotion consisting of a decoction of elder flowers. He thinks that all ointments, plasters, oils, &c., becoming rancid, increase the sensibility of the skin, and thus prolong the duration of the disease, making it last eighteen or twenty days instead of ten or fifteen. Within the last ten or fifteen years an immense number of local remedies have been proposed, the most important of which are, cauterisation with the nitrate of silver, or with the actual cautery, mercurial ointment, hogs' lard, camphor, and blisters.

Cauterisation.—Cauterisation of the inflamed surface with the nitrate of silver was first proposed by Mr. Higginbottom, who wrote a work on the subject. It was then practised in England, and afterwards in France; but the miraculous effects which it first produced have not prevented it falling into discredit. The entire sur-

face of the part affected, as also a small portion of the healthy skin, is cauterised either with the solid nitrate of silver, or with a pencil brush steeped in a strong solution of the salt. The practice of carrying the cauterisation beyond the inflamed parts is perfectly rational, as the inflammatory atmosphere no doubt extends to the skin which surrounds the tissue actually the seat of the erysipelas. Mr. Higginbottom says that he has succeeded in a great number of cases by adopting this plan of treatment. Within the last seven or eight years I have repeatedly tried this method of cauterisation, and have sometimes, like Mr. Higginbottom, seen the erysipelas extinguished; but I have much more frequently seen it continue its course as if nothing had been done. On examining the result of my experiments I find that in some cases the disease lasted from five to eight days, and in others from ten to twelve; and on consulting the cases of Mr. Higginbottom, I also find that in those of which he gives any details, the erysipelas lasted six, seven, or eight days. Now this being the natural duration of the disease, we cannot place much confidence in the remedy, and must come to the conclusion that if the erysipelas stops when cauterisation with the nitrate of silver is resorted to, it is because it has exhausted itself, and that, had its virulence not been exhausted, cauterisation would not prevent it continuing its course. We have now in our female ward a case which, if superficially examined, would seem to confirm the efficacy of this treatment. The patient in question, a young girl eighteen years of age, affected with a white swelling of the left knee, was seized a few days ago with erysipelas of the same leg. Until yesterday the erysipelas had gradually extended towards the thigh and towards the foot, emollient applications and mercurial frictions having failed to arrest its progress. Yesterday I cauterised the leg with the nitrate of silver, and on examining the patient this morning I found that the erysipelas had stopped. Many persons would feel inclined to say that this was owing to the application of the nitrate of silver, but if we attentively scrutinize the facts of the case, we shall find that they do not authorise such an induction. Erysipelas does not last forever; in this case it had attained its usual term, and the general symptoms having subsided, not only did it cease superiorly where it had been cauterized, but also inferiorly, where nothing had been done.

The actual cautery has been much extolled by some practitioners, and especially by M. Larrey, and other army surgeons. It is, however, evident that the remedy has only been applied to them in cases of

phlegmonous erysipelas; it is, therefore, difficult to say what would be the result, were it resorted to in simple erysipelas. Indeed, few surgeons are likely to propose such a measure in the treatment of the simple form of this disease.

Some surgeons recommend superficial scarification of the inflamed part, and a French practitioner, M. Lassus, has claimed the invention of this plan of treatment, although it really is not worth claiming. Others advise moxas to be applied; as, however, they do not make the necessary distinction between the simple and the phlegmonous form of erysipelas, but little reliance can be placed on the results of their experience.

Mercurial frictions have many advocates. I myself was perhaps the first who resorted to mercurial frictions in France. In 1823, being entrusted with a lying-in ward, I wished to ascertain the efficacy of mercurial ointment in peritonitis, and therefore employed it in many cases, in frictions on the abdomen, repeated every hour. I then thought it was the means of saving the lives of several females; it has since been employed by most practitioners in peritonitis, and has been generally recognized to be a very valuable remedy. The success which I met with induced me also to try it in erysipelas, and in 1831 I had had already twelve successful cases, when M. Ricord published several cases in which he had successfully adopted the same plan of treatment. My confidence in the remedy was, however, staggered, by two or three cases which resisted its action, and these were immediately followed by seven or eight in which it was equally unsuccessful. This convinced me that my previous success was mere coincidence, and subsequent experience has confirmed the idea. Since then I have every year employed mercurial frictions in a great number of cases, and have long since come to the conclusion that they possess little or no efficacy. This being the case, it is better not to resort to this plan of treatment, as there are several considerations which ought to prevent making use of mercurial ointment, unless it be absolutely necessary. It is, generally speaking, disagreeable to the patient, owing to the popular opinion which connects all mercurial preparations with the idea of syphilis. Being also used in large quantities, it may give rise to salivation, and thus render the state of the patient worse than before it was given; indeed, before long it will, I think, cease to be used in the treatment of this disease.

Hogs' lard has been substituted by many practitioners for mercurial ointment. I was also, perhaps, the first who in France used this substance in the treatment of

erysipelas. It was when I began to doubt the efficacy of mercurial ointment, that I first tried hogs' lard, and I was for some time quite surprised at the success I obtained; but I soon found that in reality it did not possess greater efficacy than the remedy I had previously employed. I have since frequently given this substance, but do not now consider it to be of any use as a remedial agent, unless as a means of keeping the skin soft, and preserving it from the contact of the air. Indeed it is by no means improbable that the irritation to which it may give rise often favours the progress of the erysipelas. Had I to choose between mercurial ointment and hogs' lard, I should certainly prefer the latter remedy; not that I believe it to possess greater efficacy, but because it does not expose the patient to those inconveniences which often follow the administration of mercurial preparations.

Camphor, pulverised, and thrown lightly on the part affected, has been used by some practitioners against erysipelas. M. Malgaigne says he has employed it in this manner with great benefit to his patients. I do not, however, feel inclined to place much confidence in its properties.

Some surgeons have applied *compression* in the treatment of simple erysipelas. Judiciously managed, compression is a powerful remedy against simple inflammation, but I do not consider it to be of much avail in this form of the disease. It has been said that I was the first to employ it against erysipelas; but this is to be attributed to a misconception of what I said on the subject. I certainly did state, in 1826, that compression is an heroic remedy in the treatment of erysipelas, but I distinctly said, at the same time, that I was speaking of the phlegmonous or subcutaneous form of inflammation only; I had, indeed, at that time, some idea that it might, perhaps, be efficacious in the simple form of the disease, but experience has shown me that this is not in reality the case; I have frequently tried it, but the erysipelas has nearly always escaped from underneath the bandage.

Blisters have been a favourite remedy with many practitioners. They were often employed by Ambrose Paré, and were much resorted to in Spain during the last century. They were but little known in France some thirty years ago, and were introduced into practice by M. Rodemel, who spoke of them in his Thesis, and by Antoine Petit, of Lyons. Dupuytren, however, told me that he was far from placing that reliance on them that it was asserted he did. I myself have tried blisters in every possible shape, and in every possible manner, large and small, above or below, around or in the centre of

the inflamed surface, and have come to the conclusion that they are of no use whatsoever in erysipelas, properly so called. In cases in which the erysipelas has occupied both legs, I have applied a blister to one and not to the other; and I have seen its course arrested on the one only on which the blister was applied. But then, again, on repeating the experiment, I have seen the reverse occur. Nothing, indeed, seems to be more uncertain than the course of this disease.

Having brought to a close our examination of the local treatment of simple erysipelas, I will recapitulate my opinions in a few words. I do not believe that any local remedy with which we are now acquainted can extinguish simple erysipelas, and I even doubt whether there be any capable of arresting its progress. The only local treatment, therefore, which in the present state of science the disease requires, is the application of linen steeped in a decoction of marsh mallows, or slight frictions with hogs' lard. When the skin is very delicate a little fine flour may be used to protect it from the action of external agents.

If such is really the value of these various agents in the treatment of simple erysipelas, how is it that we find them lauded and recommended in the works of numerous talented men who have written on the subject? They cannot always have been mistaken with regard to the treatment they employed. The examination of the treatment of those affections which are confounded with erysipelas will, perhaps, throw some light on this part of the question.

TREATMENT OF PHLEGMONOUS ERYSIPELAS.

The inflammation in phlegmonous erysipelas occupying a tissue which very soon becomes modified, the treatment must necessarily be energetic. The remedies which are generally directed against this affection are the same as those which I have mentioned in speaking of the treatment of simple erysipelas, and as several of them are extremely useful agents we must again pass them in review.

Bloodletting has always, and very justly, been considered an important feature in the treatment of phlegmonous erysipelas. When the patient is strong and robust it is proper to bleed from the arm; when, on the contrary, he is weak and emaciated, recourse must be had to leeches. It is well, however, not to place too much reliance on the efficacy of local depletion, especially when the inflammation occupies a considerable surface, as we have, in the first stage of the disease, a much more efficacious plan of treatment at our disposal, when, at least, the form of the part

affected is such as to allow us to employ it, viz. compression. If applied before mortification of the cellular tissue has taken place, or before a certain quantity of pus has been deposited between its lamellæ, it often entirely destroys the inflammation. Nor need we be deterred from adopting this plan of treatment when pus has been formed, by the fear of increasing the inflammation, as even then compression is useful. It destroys the inflammation in those parts in which suppuration has not yet taken place, and thus tends to circumscribe the purulent collection. In cases of this kind, however, we must not attribute the formation of matter to the compression, as a person prejudiced against the remedy would be very apt to do. Some few months ago, we had in our wards a man who, owing to a fall, had violently sprained his ankle. The opening of an abscess which had formed near the internal malleolus, was followed by the appearance of phlegmonous erysipelas, which began to spread rapidly. As there appeared every probability that the inflammation would extend to the articulation, I determined at once to try compression, and had both the foot and the leg bandaged, leaving only the wound exposed. The next day, not only the local inflammation, but also the general symptoms, had considerably abated, and in the course of a few days the phlegmonous erysipelas had entirely disappeared. In fine, I believe compression to be a most valuable remedy in this disease; but one which, like all other mechanical plans of treatment, depends in a great measure on the person who applies it.

You will no doubt remember that I told you that blisters were of little or no use in the treatment of simple erysipelas; but this is not the case in the phlegmonous form of inflammation, against which they are employed by many practitioners. They are generally placed in the centre of the inflamed part, with a view to fix the purulent collection to the spot where they are applied, and thus to change the diffusive inflammation into a circumscribed phlegmon. Having repeatedly adopted this plan without any beneficial result to the patient, I modified it by substituting very large blisters for the small blisters which are generally used. The very idea of the immense blisters to which I have recourse sometimes creates alarm in the minds of those who have not seen them employed, but there is, in reality, nothing to warrant such a feeling; the pain which they cause, contrary to what might be expected, is not much greater than that which is occasioned by blisters of the usual size. I have, I believe, in several instances, saved the life or the limb of my patient by adopting this

plan of treatment. I remember very well a case of this kind which occurred in my wards last year. The patient, an old man, of a weak constitution, was affected with phlegmonous erysipelas, extending over the leg and part of the thigh, and was in a very critical state. As it was impossible to have recourse to general bleeding, I applied an immense blister on the entire leg and thigh, in the form of a pantaloen, and the patient was cured.

When recourse is had to cauterization in phlegmonous erysipelas, it is necessary that the entire thickness of the skin should be acted on; superficial canterization with the nitrate of silver would be of but little use in a disease the seat of which is underneath the integuments. M. Baudens says that he has employed the actual cautery in Africa with great success. He uses an olive-shaped cautery, heated to whiteness, with which he cauterizes the skin in ten or twelve places. M. Larrey employs the cautery in the same manner, but uses a differently shaped instrument. I have several times adopted this plan of treatment in very severe cases, but always lost the patients. It does not, however, follow that the cauterization had any share in their death. I think it may prove beneficial in the first stage of the disease, but as there are other remedies in which greater confidence may be placed, I have not since resorted to it. Incisions have always formed part of the treatment of erysipelas, from the days of Galen, who distinctly alludes to them; but these incisions, when not made to evacuate the pus which might have formed, were slight, and consequently can only be looked upon as a modification of local bleeding. In the present century deep incisions have been made merely with a view to arrest the progress of the inflammation. Since the year 1810, M. Beauchere has had recourse, with great success, in the treatment of this affection, to numerous incisions, which entirely divide the skin. In 1828, I saw him, in a case of amputation of the thigh, make numerous incisions on the stump which had been attacked with phlegmonous erysipelas. I was rather surprised at the audacity of the treatment, for it certainly appears rather a singular way of diminishing inflammation, to make ten or fifteen deep incisions in the part inflamed; but on the following day I found the man much better. Since then I have very often had recourse to these incisions, and have found the remedy heroic. Whenever, therefore, you think that compression or the application of blisters will not prove sufficiently powerful agents to arrest the progress of the inflammation, you must resort to incisions without hesitation. As, however, patients, and especially women, are not very partial to this

mode of treatment, it is well not to adopt it unless it will be really necessary. The incisions must be an inch or two in length, and ought entirely to divide the skin; they must be made wherever the inflammation seems to extend. No fear need be entertained of carrying them too far, if we are guided by this rule, as the subcutaneous cellular tissue is always mortified when the skin becomes red, and if an opening is not made with the bistoury, nature will herself make one at last, but not until the skin has been separated to a considerable extent from the tissues underneath.

I might mention several other remedies, but as they are of no importance I shall abstain from so doing. What indeed can poultices, ointments, &c., effect in a disease of the nature of phlegmonous erysipelas? We must, however, make an exception in favour of mercurial ointment. This substance may possibly modify the disease during the inflammatory stage; still, for my own part, I must confess that I place but little reliance on it. Suppuration has or has not taken place. If it has, frictions with mercurial ointment will not cause the pus to diminish, and if it has not, compression is infinitely preferable, when it can be resorted to, or blisters when it cannot.

With regard to internal medication there is but little to say on the subject. You have merely to follow the general rules which guide us in the treatment of disease.

From what I have just said, you will perceive the various plans of treatment recommended against erysipelas; now find their application: that they are not to be entirely laid aside, but merely applied to the treatment of the disease, against which they are really beneficial.

Treatment of angioleucitis.—Angioleucitis is a very common complaint, and one which has often been confounded with external phlebitis and simple erysipelas. Indeed, there can be no doubt that many pretended cases of erysipelas or phlebitis, cured by the application of leeches to the ganglions of the groin, were merely cases of angioleucitis.

When there is nothing specific in the affection, its course may be arrested, or the inflammation may even be completely destroyed, provided it can be attacked at the commencement, before suppuration has taken place. In the first period of the disease, in the period which is marked by rigors, heat, thirst, &c., copious general bleeding must be resorted to, and abstinence from all food must be enjoined. The patient must also introduce into the economy large quantities of some non-irritating liquid. Locally, pledgets of linen, dipped in a decoction of marsh-mallow or elder flowers, may be applied.

If, although the general symptoms are slight, the ganglions, to which the lymphatics of the part affected direct their course, become tumefied and painful, leeches should be placed on them. When the limb, which we will suppose to be the seat of the inflammation, presents not only red ribbon-like streaks, but also patches of inflammation, formed by circumscribed hardened portions of the integuments, from thirty to forty leeches must likewise be applied on these inflamed patches. If they are superficial, and occupy the leg, the foot, the arm or the forearm, compression may be resorted to, and is then nearly as efficacious as in phlegmonous erysipelas. Mercurial ointment is also really useful in this disease; indeed, I am inclined to believe that many of the cases of erysipelas, which are said to have been cured by mercurial ointment, were merely cases of angioleucitis.

Blisters may be employed when the disease has existed long enough to lead us to believe that suppuration has actually occurred. When this is the case we cannot expect to derive much benefit from the other measure that I have just mentioned, and as blisters both favour the resolution, when it is still possible, and hasten the formation of purulent collection, when resolution is no longer to be looked for, they are evidently indicated.

PHLEBITIS.

External phlebitis may be arrested in its progress, and effectually cured by judicious treatment; a result which it is of the greatest importance to attain, as, although in itself by no means a serious malady, it may lead to an extremely dangerous one—internal phlebitis. No surgeon, indeed, can be free from anxiety, when he knows that he has under his care a patient affected with inflammation of several large veins, as he must be aware that he is on the brink of a precipice; energetic measures must therefore be resorted to. All that has been said respecting the treatment of angioleucitis will also apply to the treatment of this affection. Thus, at the commencement, general bleeding is often indicated; in many cases, however, the application of twenty or thirty leeches will prove sufficient. Even when general bleeding has been resorted to, it is often necessary to apply leeches along the course of the inflamed vessels. If, after these measures have been adopted, the inflammation still persists, mercurial frictions may be tried. Compression, if equally applied, is also serviceable. Uniform pressure may be attained by means of a bandage, provided the inequalities which exist are filled up with lint or pledgets of linen. Hunter advises the compression to be established above the vein, but such a plan of treat-

ment is altogether indefensible. It is not by the strangulation of a vein that we can hope to arrest the inflammation of which it is the seat. Indeed, it is very doubtful whether Hunter, with his wise and cautious disposition, had ever had recourse to the plan which he recommends. Some practitioners advise the vein to be divided above the part inflamed, but the operation would be attended with considerable danger, as it might give rise to internal phlebitis. Beanhene advises scarification of the inflamed issues. As, however, the desired effect is nearly always obtained by the application of leeches, and incisions are seldom submitted to by the patient without great reluctance, I have never adopted this plan of treatment. In America blisters have been much used; they may be beneficial, but leeches still deserve the preference; at least in my opinion.

Although every possible measure calculated to arrest the progress of the disease may have been resorted to, both phlebitis and angioleucitis occasionally terminate by suppuration. When this occurs, the characters which the collection of pus presents are the same as those which are met with in common phlegmon. In phlebitis the abscesses are numerous, small, and developed along the course of the vein, or in the cellular sheath which surrounds it. In angioleucitis they are also numerous, and are found in the red, hard, circumscribed patches of inflammation, which I have already described. In both maladies they ought to be opened early, especially in external phlebitis, as it is rather an alarming circumstance for an inflamed vein to be surrounded by a collection of purulent matter. We have no reason to fear in angioleucitis, as in phlebitis, lest the economy should be poisoned by the pus which is formed; it is, nevertheless, well to make an early opening, by which the pus can escape, as it may make its way between the muscles, and as its presence also increases the suppuration. The incisions ought, in this instance, to be large, as the indurated tissues nearly always contain small caverns, which otherwise are not entirely evacuated. Sometimes, when abscesses of this nature appear small, a large quantity of pus is discharged, whereas in other instances, although they appear large, a comparatively small quantity of pus is found to exist. This may be accounted for, in the first instance, by a large cavern existing under the indurated superficial tissues; and, in the second, by the tissues on which the apparently large abscess rests being indurated. The quantity of the pus is generally greater when it comes from deep-seated parts.

You must not suppose that when the abscesses which occur in angioleucitis have

been opened that the disease is cured. Very often other abscesses supervened, although the inflammation has apparently been subdued. This remark also applies to phlebitis, abscesses often appearing one after the other along the course of the inflamed vessels. In external phlebitis the pus is sometimes of a reddish colour, but whether this is to be attributed to transudation or not, I am unable to say.

When the abscesses have been opened recourse must be had to emollient applications, with a view to diminish the tumefied state of the surrounding parts.

Such is the treatment of these diseases when they occur separately. But in practice we generally meet with them combined. How are we, then, to act when this is the case?

Without losing sight of the treatment peculiar to each affection, you must be guided by their comparative importance, and by the order in which they manifest themselves. Thus, supposing simple erysipelas should make its appearance on a patient affected with phlebitis or angioleucitis, the treatment must be the same as if the erysipelas were not present; no remedy with which we are acquainted appearing to exercise any control over this latter malady. The presence of the erysipelas may modify the prognostic, but ought not to modify the treatment.

Should, however, phlegmonous erysipelas appear as a complication of phlebitis or angioleucitis, your conduct must be very different. The phlegmonous erysipelas being the most dangerous disease, the treatment recommended against it must at once be resorted to. This may be done without the least hesitation, as the various remedial measures which the treatment of this malady embraces, such as blood-letting, compression, incisions, &c., are also of use in the treatment of phlebitis and angioleucitis. The treatment adapted to the most serious disease must be employed, because, strictly speaking, it agrees with the two other affections, whereas the treatment which would be adapted to them is not sufficiently energetic for phlegmonous erysipelas. Should simple erysipelas also be present the treatment would be the same, although the prognostic would necessarily be more serious.

It is by thus entering analytically into the examination of the elements which constitute erysipelas, that we become able to account for the action of the various agents which have been employed against it, and how it is that in some instances they have been successful, whilst in others they have produced no beneficial result whatever.

ON THE CIRCULATION OF THE MATERNAL BLOOD IN THE HUMAN OVUM

DURING THE EARLY MONTHS.

By ROBERT LEE, M.D. F.R.S.

[For the London Medical Gazette.]

IN the second month of pregnancy the ovum consists of the embryo, umbilical cord, amnion, and liquor amnii, vesicula umbilicalis, chorion, placenta, and decidua. The embryo appears to be made up almost entirely of head and abdomen, and the umbilical cord, by which it is attached to the membranes, is thick, short, and transparent. The amnion is a small pellucid sac, which contains the embryo and liquor amnii, and forms the sheath or covering of the umbilical cord. The amnion does not completely fill the cavity of the chorion, and the space between them is occupied by a peculiar delicate reticular texture, containing a gelatinous fluid. As the amnion enlarges this net-work disappears, and the outer surface of the amnion comes into contact with the inner surface of the chorion, and they adhere together. No blood-vessels, absorbents, or nerves, have been discovered in the amnion, although it is probably possessed of all these, like other membranes, and secretes the liquor amnii.

The *vesicula umbilicalis* is situated in the reticular texture, between the amnion and chorion, about an inch from the termination of the umbilical cord in the placenta. It is a small spherical-shaped sac, which contains a white opaque fluid, and from it there passes a duct which can be traced along the cord to the navel of the embryo, and from thence to the duodenum, which it probably enters. An artery and vein, from the superior mesenteric artery and vein, accompany the duct of the vesicle, and ramify upon its outer surface. These and the duct soon shrink, and become completely impervious.

The *chorion* is the middle membrane of the ovum. It is uniformly thicker and stronger than the amnion, and no blood-vessels have been seen in it. Its whole outer surface is covered with villousities, which arise from it by slender roots, and spread out like the branches of a tree under the decidua, which they are firmly united. The villi are most luxuriant on that side of the cho-

tion where the placenta is beginning to be organized; but every where they exist, and are united together at their summits or extremities, and are so interlaced that they form a great reticular tissue under the decidua, or between the outer surface of the chorion and inner surface of the decidua. The villi often terminate in irregular-shaped bulbous enlargements, and from their sides long smooth filaments pass off to connect them with one another. The villi of the chorion do not run in pairs like blood-vessels, and they have never been injected. Viewed through a microscope they resemble a mass of small, smooth, convoluted intestines, and do not appear to be hollow. They are probably membranous processes sent out from the chorion to the decidua to assist in forming the placenta, and to constitute a great cellular structure between the decidua and chorion, for maternal blood, in that part of the ovum to which the placenta does not extend. Between the roots and branches of the villi are large cells or spaces formed, which all freely communicate together, and also with the cells or interstices of the placenta, which at this early period are essentially the same as the cells of the chorion, and have no septum interposed between them. If ova expelled in abortion, with the membranes entire, be examined, the cells of the chorion and placenta are always found distended with fluid or coagulated maternal blood. If a blow-pipe be introduced into the cells of the placenta or chorion, it passes all round the ovum, and fills the whole space between the decidua and chorion: injections do the same. That it is maternal blood which distends the cells of the chorion and placenta is evident from this—that some morbid ova have the membranes formed without the embryo, or only with the umbilical cord, and a few small tufts of vessels, at its extremity, and that in some of these malformed ova the villi of the chorion have been fully developed, and all their cells, and those of the placenta, distended with maternal blood in a fluid and coagulated state. So invariably have the cells of the chorion been seen filled with blood, in ova expelled before the third month, that it is more than probable they are never filled with any other fluid. This blood can only enter the cells of the placenta and chorion through the arteries of the placental decidua.

The *decidua* is the outer membrane of

the ovum, and covers it as completely as the shell does the hen's egg. That portion of it which covers the placenta is called the placental decidua. At the circumference of the placenta it separates into two distinct membranous layers, which extend over the whole of that part of the ovum which is not covered by placental decidua. The outer of these layers of decidua is termed the uterine decidua, the inner layer the decidua reflexa, and between these there is always a large cavity called the decidual cavity. At the edge of the placenta, the placental decidua always divides into two distinct layers, between which there is a smooth cavity, the outer wall of which is formed by the uterine decidua, and the inner wall by the decidua reflexa. The outer surface of the uterine decidua adheres to the inner surface of the uterus, but the inner surface of the uterine decidua is smooth and free, like the pleura costalis. The outer surface of the decidua reflexa is also smooth and free, like the pleura pulmonalis, but its inner surface firmly adheres to the extremities of the villi of the chorion, as the pleura pulmonalis does to the substance of the lungs. Dr. Hunter's description of these layers of the decidua, and of the decidual cavity, is most accurate; but he assigned no uses to them, and does not seem to have suspected that the circulation of the maternal blood, in the early months, is carried on chiefly by the uterine and reflected deciduous membranes, and by the cavity formed between them.

The *placental decidua* is a thin delicate membrane which covers the whole uterine surface of the placenta, and, in the second month, is intimately connected with the villi of the chorion, which, at this period, constitute the greater part of the placenta. In a recent ovum, numerous small white curling arteries, filled with blood, are visible in this portion of the decidua. These arteries usually project a little beyond the surface of the placental decidua, and the orifices with which they had anastomosed, with the arteries in the lining membrane of the uterus, are very distinct. These arteries are seen in the placental decidua filled with blood, at the end of the ninth month, subsequent to labour, and during the whole period of pregnancy. They convey the blood from the arteries into the interstices of the placenta. Ellipti-

cal openings can also be seen in the placental decidua, which anastomosed with the oblique venous apertures in the lining membrane of the uterus. A communication is formed by these openings between the cells of the placenta and the veins of the uterus. As no arteries can be discovered in the uterine decidua in the second month, it may be inferred that the maternal blood enters the ovum solely by means of the arteries in the placental decidua. About one-fourth part of the ovum, in the early months, is covered with placental decidua, the remaining three-fourths being invested by the uterine and reflected deciduous membranes.

The *decidua reflexa*, when examined after the uterine decidua has been wholly cut away around the edge of the placenta, is very thin, and numerous small openings, with smooth edges, are every where visible in it; but they exist in greatest number near the edge of the placenta, where an angle is formed between it and the uterine decidua. Here, as Dr. Hunter has observed, the decidua is often extremely thin, and perforated with small openings, so as to look like a piece of lace. These openings in the decidua reflexa communicate with the cells of the chorion and placenta. I have filled all the cells of the chorion and placenta with air, mercury, and size, by means of a pipe introduced into one of these openings in the decidua reflexa, and, after the cells were filled, the air and injection have passed back through the surrounding openings in the decidua. Through an aperture artificially made in the decidua reflexa, the same has taken place; and in recent ova, by slight pressure, the blood contained in the cells of the chorion has readily flowed through the openings in the decidua reflexa. I have several preparations in which coagula of the fibrine of the blood are seen hanging out of these orifices in the decidua reflexa; and these could not have been formed if the blood had not been flowing from the cells of the chorion, through these openings, before the coagulation took place. The decidua reflexa is covered by a fine membrane-like epithelium, which is also reflected over the whole inner surface of the uterine decidua, and passes into the apertures in both membranes. This resembles the serous membrane of cavities containing blood. This fine membrane lining the whole

decidual cavity can be dissected off, and its existence clearly demonstrated. In several of my preparations this has been done both from the outer surface of the decidua reflexa, and inner surface of the decidua uteri, and I have had drawings made from these.

The outer wall of the decidual cavity is formed by the *uterine decidua*, which varies much in thickness. The outer surface of this portion of the decidua, which had adhered to the uterus, is usually very irregular, and long slender filaments from thick roots are often seen projecting from it: some of these filaments appear to be hollow. A great number of openings are also visible on the outer surface of the uterine decidua, which are the terminations of venous canals which pass obliquely through this membrane from the smooth inner surface or outer wall of the decidual cavity. Small sacs, with apertures in their sides or summits, as figured and described by Dr. Montgomery, are also frequently seen growing from the outer surface of the decidua uteri: these are smooth within, and a communication can often be traced between the interior of these sacs and the veins of the decidua. I have not been able to discover any arteries in this portion of the decidua similar to those I have seen in the placental decidua. The inner surface of the decidua uteri is comparatively smooth, and, seen through a magnifier, appears not unlike the convolutions of the brain: at the bottom of these are deep grooves or depressions, in which are situated numerous minute apertures of a circular or oval form. There are some of these openings on the raised portions of the membrane as well as in the grooves; into these openings the epithelium which lines the decidual cavity passes, and coats the venous canal in the decidua uteri. These veins pass obliquely through the membrane; they frequently communicate together so as to form a great plexus, and gradually increase in size as they approach the uterine surface. I have seen the decidua uteri adhering through its whole extent to the inner surface of the uterus in the second month, with all these veins distended with firm dark clots of blood. On separating the membrane gradually, these coagula were seen passing from the decidual veins into the veins of the uterus. The trunks of these veins were on the uterine side of

the membrane, and they had evidently been conveying blood from the decidual cavity to the veins of the uterus. All the veins of the uterine decidua, in several ora which I possess, are filled with coagula of the fibrine of the blood, and by following these the course of the veins from the inner to the outer surface of the membrane can be traced. Mr. Joseph Toynbee has filled all these veins of the uterine decidua with injection, and by these also the direction of the vessels, and their connection with one another, and their termination on the outer surface of the membrane, can be clearly perceived. It was by observing the manner in which coagula of the fibrine of the blood passed through the placental decidua into the veins of the uterus, and by following coagula from fibrous tumors of the uterus into the blood-vessels of the organ, that I first became acquainted with the precise manner in which the circulation of the blood is carried on in the placenta, and in fibrous tumors; and it was likewise by tracing the coagula which occasionally distend the veins of the decidua uteri that I was first led to suspect that these vessels do not convey blood or fluid of any kind from the uterus into the decidual cavity, but remove from this cavity that blood which had passed into it, through the openings in the decidua reflexa, from the cells of the chorion.

I had very lately sent me an ovum of two months, which had been expelled with all the membranes entire. The decidual cavity was filled with blood partly fluid and partly coagulated. Clots of the fibrine were hanging out of the orifices of the canals in the decidua reflexa. The blood could not have been forced into the decidual cavity by any accident, as Breschet alleges was the case with the ovum described by Heusinger, where the decidual cavity was likewise full of blood.

INVERSION OF THE UTERUS.

“REMEMBER, therefore, should inversion occur to you, (which I hope it will not, for its occurrence is not creditable,) remember, I say, that it is your office, as soon as you recover the accident, to replace the organ without the delay of a moment.”—DR. BLUNDELL, *Lancet*, vol. ii. p. 547.

“Whenever this serious accident (inversion of the uterus) has happened, (which, as it must always be the consequence of improper treatment, I trust will never occur in your hands), it may be known, &c.”—DR. F. H. RAMSBOTHAM, *Medical Gazette*, No. 48, August 30, 1834.

To the Editor of the Medical Gazette.

SIR,

AFTER the strong language of condemnation indulged in by the authorities above quoted, as well as by others whose opinions I have read, but have not considered it necessary to quote, it requires some moral courage and honesty of purpose to publish a case of inversion of the uterus; but I regard such remarks as hypothetical flourishes, sounding perhaps very bravely in a lecture room, but, like too many others, to be proved erroneous in practice.

They remind me of a statement which I once heard a London lecturer make, with great energy of manner, when he was on the subject of hæmorrhage occurring after labour: “If,” said he, “the patient breathe after you enter the room, and die of hæmorrhage, she dies a murdered woman!!!” And yet, (as I told him,) Smellie, Denman, Haighton, *ethoc genus omne*, including our modern illuminati, have witnessed such fatal terminations, and have escaped the inquisitorial impertinence of forensic examination.

Dr. Ramsbotham, after the remarks above quoted, goes on to observe, “For this purpose, (the replacement of the uterus,) the hand being half shut, the knuckles are to be pressed firmly against the most depending point of the tumor; when the part will yield, the fundus will pass up with a sort of jerk. Unless this restoration be effected within a few minutes of the time when the accident took place, I should presume either that the uterus could not be reduced at all, or that the hæmorrhage must be excessive.”

From this, of course, I am to infer that Dr. R. has experienced this “jerk;” and as it must have been “within a few minutes” of the occurrence of inversion, I also infer that this “improper treatment” happened in his own practice, and not in a consultation case; for I do not suppose that the assistance of a second person could be secured within the brief space of time here mentioned.

M. C. æt. 22, was attended by me in her first labour, August 4th, 1840. The labour was natural, and occupied only a few hours. She was delivered in a recumbent position; no secale was given, or other artificial means used: the liquor amnii was in very small quantity, and the membranes ruptured spontaneously just as the head was passing through the vulva. The child was very small, and, as it was weakly, the funis was not severed for about ten minutes; but as it was very long, and not kept tense, no dragging of the placenta could have been experienced.

As soon as the funis was divided, I felt the abdomen for the uterus, and found it occupying its usual situation, and not much contracted: a few minutes after she had a pain, and I introduced my finger, and did not feel the placenta; but another pain very soon followed, which made her complain more than is usual after the birth of the child, and the placenta immediately occupied the vagina; it was quite detached, and rested on the perineum, so that I merely had to receive it. As soon as the placenta was removed, I placed my hand on the abdomen to ascertain the state of the uterus, but I could not find it; I immediately examined by the vagina, and found in it a globular fleshy body, which felt exactly like a placenta, passing before the head of a child; I instantly perceived that it was a case of inversion of the uterus, and, without the delay of a moment, set about its reduction, which I accomplished without much difficulty, notwithstanding it had contracted to a small size; but I could not succeed with my knuckles, as advised by Dr. R.; it was pressing on too large a surface, and, consequently, the whole uterus receded before my hand. I then pressed the centre of the presenting part with the flat part of my thumb, which soon occupied a cavity instead of resting against a convexity, and, as it increased in size, my fingers followed my thumb until my hand was in the uterus, which immediately contracted on it.

There was not a severe hæmorrhage during the period of inversion, and that *not by gushes*, and after its reduction scarcely any; but the nervous system was instantly depressed by the inversion, and continued much influenced for about half an hour. There were no symptoms of importance afterwards.

I can easily imagine how *likely* inversion of the uterus is to happen from "improper treatment," by pulling at the funis, or from the other circumstances mentioned by authors; but this is not the question: *Can* it occur spontaneously, or altogether independent of the conduct of the practitioner, good or bad? I now say *IT CAN*; and this brings me to remark on the impropriety, as well as the injustice and cruelty, of authorities using such strong language of censure on merely *supposed* cases—language which may be quoted, and used as evidence, to the injury of a man's reputation when he is blameless.

I conclude by impressing the necessity of *always* examining over the abdominal coverings after delivery is completed, for the state and situation of the uterus. This, in reference to the present case, has saved me much mental distress; and I well remember, about fifteen years ago, a case which happened to a gentleman of long standing in the profession, and of deserved reputation: the delivery was completed, he went down stairs, congratulated the husband, and sat down to some refreshment: whilst taking it the nurse hurried into the room crying for aid; he ran up stairs, but the patient was in a few moments dead! It was a case of inversion of the uterus.

One last remark. It seems a work of supererogation to say, with Blundell, "as soon as you discover the accident, it is your office to replace the organ;" but I would again enforce the necessity of always making such an examination after labour as must necessarily detect this or any other important condition of the uterus, excepting laceration.

I have the honour to be, sir,

Your obedient servant,

JAMES HURD.

Yatton, Bristol, August 13, 1840.

HÆMORRHAGE FROM THE CONJUNCTIVA.

To the Editor of the Medical Gazette.

SIR,

THE following cases of hæmorrhage from the conjunctiva, although presenting but little of practical importance, may yet be deserving of publication as curious pathological occurrences.

Your obedient servant,

EDWARD HOCKEN.

Exeter, August 12, 1840.

It would seem that hæmorrhages are most likely to occur spontaneously from mucous membranes, being in the generality of cases the result of transudation through the coats of the vessels and the investing membrane, or more rarely from direct rupture of some vascular branch. When depending on transudation, the condition necessarily supposes a pre-existing condition of capillary hyperæmia, which may be either active or passive in its local and general symptoms, with every intermediate shade. As all the mucous membranes are predisposed to spontaneous hæmorrhages, so those are especially so which are most active in their functions, and receive the largest vascular supply: hence the frequency of hæmoptysis, hæmatemesis, and melæna, and the comparative infrequency of hæmorrhage from the conjunctiva. That hæmorrhages occasionally do take place from the conjunctiva the following cases will prove:—

CASE I.—A delicate strumous child, about four years of age, during the spring months of 1838 became affected with a severe catarrh. There was cough, coryza, and slight fever. At the same time both eyes were congested, and there was a slight catarrhal discharge from the conjunctivæ. On seeing the child one morning, I discovered that blood was slowly escaping from between the lids, and learned from the mother that one or two tea-spoonfuls had already been lost. The conjunctivæ presented an ecchymosed appearance. By a gentle local astringent this was readily suppressed, and did not recur during the continuance of treatment.

CASE II.—An infant was brought to the West of England Eye Infirmary, suffering from purulent ophthalmia, which had existed several days; but although there was considerable discharge, yet the corneæ of both eyes were sound and transparent. One morning of admission, the mother brought the child into the room in great alarm, stating that the eye was bleeding. In this case, blood slowly trickled from between the lids, mixed with the discharge. The conjunctivæ were deeply injected, and presented the appearance of ecchymosis as in the former case.

REMARKS. — In both these cases hæmorrhage was the result of active congestion, and connected with a mor-

bid increase of secretion from the mucous tunic, the membrane being placed for a time in that condition which I have before stated as predisposing to hæmorrhage by transudation. Although I have not met with a case, yet I have no doubt that a passive transudation might result from the conjunctiva in those conditions of the system where hæmorrhages take place from so many parts of the body.

FUNCTIONAL DERANGEMENT OF VISION.

To the Editor of the Medical Gazette.

SIR,

THE following case of disordered vision, depending upon functional derangement of organs distant from the eye, is a curious addition to that already too numerous class of affections which, from our ignorance of the minute links in the chain of morbid changes, we are as yet compelled to call "sympathetic." As such it will probably find a place in your valuable journal.—I remain, sir,

Yours, &c.,

THOMAS DORRINGTON.

Manchester, August 11, 1840.

On the 21st of February, 1840, I was sent for in haste to a lady who was stated by the messenger to be about to have a fit. I had been in attendance upon her about a week before to remove a constipated state of the bowels that caused her much pain in the head. She was a widow, of stoutish leucophlegmatic habit, of very lax fibre, great natural indolence, though liable to hysterical excitement, and about 30 years of age. She had suffered from illness which, from what I could gather from her statements, seemed to have been characterized by violent hysterical symptoms, for about a year, but had been convalescent for some little time before I first saw her.

She told me when I arrived that she had been seized with a "queer" sensation about the head just before she sent for me, and that she found a change in her sight, of the following sort, occur at the same time: When she looked with both eyes at objects, they seemed inverted and misty; but when she closed either eye, she could see naturally and clearly with the other. Her face seemed

a little flushed, and her pulse was about 98; she had no pain, but a confused feeling in her head. All these feelings had supervened suddenly whilst she was sewing. On inquiry I found that her bowels had been constipated for two or three days. Whilst I was with her the vision was restored to its natural state, and the feelings of confusion in the head left her. She remained quite comfortable for two hours, at the end of which time she went to bed. I prescribed an antispasmodic draught and purgative, after having assured myself that there were no symptoms which could be looked upon as premonitory of apoplexy in the case.

22d.—When I saw her to-day, she complained of the same derangement of vision as that which induced her to send for me yesterday evening. The purgative was ordered to be repeated, as the bowels had been very slightly moved.

Evening.—Her vision was still disordered, but in a different way. When she looked with both eyes at an object, she now saw dimly an object and a half; the superadded half being rather lower, less distinct, and to the right side of the whole object, and seeming at its edge to become diffused and lost in it. When she looked with either eye, having closed the other, she saw objects correctly, but they were not quite so clear as natural. She had no pain any where, but a sort of confused feeling in the head again. The eyes were quite natural in appearance, the irides acting perfectly. The pulse was 96, and the cheeks rather flushed.

She remained in this state for two days, her bowels being moved very slightly, though active purgatives were administered regularly during the time.

25th.—She still had a degree of disorder in her vision, but it was only that she saw indistinctly when objects were three or four yards distant; seeing them perfectly when they were brought near the eyes. Her bowels were acted on pretty freely, a considerable quantity of solid feces being evacuated; pulse 80, and the confused feeling about the head had disappeared.

26th.—She was so much better that I considered her fit to be discharged, although she had still slight dimness of sight. I ordered her to take a couple of aperient pills nightly.

She continued for a few days to be occasionally troubled with dimness of

vision, but soon got entirely rid of her disagreeable complaint.

I have strong reasons for suspecting that we must look upon this case as more or less connected with that protean malady, hysteria; for about two months after I had it under treatment, I received a letter from a medical gentleman in Liverpool, stating that the lady was then suffering from a most severe attack of this affection. The overloaded state of the large intestines, so common in hysteria, the curious morbid changes of sight that occurred, the suddenness of the attack, the intervals of natural vision that occasionally existed during its continuance, and the restoration of the healthy functions of the retinae when the bowels were unloaded, combined with the history of the former illness of the patient, as given by herself, and that of the latter, as given by her medical attendant after she left Manchester, seem distinctly to point to hysteria as the cause of her anomalous symptoms. A satisfactory explanation of the proximate cause of these—viz., the physiological condition of the retinae during their occurrence, can hardly be expected till we understand how an inverted image in the eye produces erect vision in the sensorium.

ADAMS'S IMPROVED HOOK

FOR STEADYING THE EYE DURING THE OPERATION FOR STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

An important step in the operation is that of steadyng the globe of the eye previously to the collection of the rectus muscle by means of the blunt hook. For this purpose various sharp hooks have been employed; and all operators, at least those who have had sufficient experience, are agreed on the advantage and necessity of an instrument of this kind, though to most of the hooks which have been hitherto used the serious objection offers itself, that they produce a distressing pain by pressure on the globe, and even thereby occasion sometimes sickness and fainting. In order, then, not to forego the advantages of a sharp hook, and at the same time to obviate the injurious effects, I venture to propose, with a con-

sidence resulting from repeated trials, a hook, the form of which, whilst it relieves the patient of the ill effects of pressure on the globe, facilitates the fixture of the globe with the least possible injury to the tunics of the eye, the sclerotica included.



The hook, or tenaculum, of which a figure is annexed, was made by Weiss. It consists of a slender stem, an inch and a half long, fixed in a handle of the length of four inches. The stem is bent near the point at an acute angle, so that the returning part, which forms the hook, is one line in length, and its extremity at the distance of half a line from the stem.

The use of this instrument I would, then, suggest to the profession; and it will be seen that the hooked part of the stem is bent upon itself at such an angle as to require its introduction into the sclerotica, not by a sudden thrust at a right angle with its stem, but by a gentle motion in a line with the direction of the handle of the instrument, and so as to enter the sclerotic obliquely, thus rendering all direct pressure on the globe unnecessary, as the motion is to draw the eye outwards, and not to press it backwards.

The acuteness of the angle of the improved sharp hook, and the shortness of its reflected extremity, are a sufficient protection against its being thrust through the sclerotica.

That it facilitates the operation, by bringing the parts more directly under the eye of the operator; that it gives him a perfect command over the motions of the globe, which must otherwise be difficult to control; and that it lessens pain by allowing all the steps of the operation to be conducted within view, so that there is no danger of inflicting unnecessary injuries in parts out of sight; are facts too self-evident to need further comment.

I may add, in conclusion, if there be one thing more necessary than another towards the success and safety of all operations on the eye, it is the being able to obtain the utmost steadiness of the organ by such means as shall cause the least pain, thereby rendering the operation more supportable, and less

liable to the accidents of resistance on the part of the patient.—I am, sir,

Your most obedient servant,

JAMES J. ADAMS.

27, New Broad-street, City,
August, 1840.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abréger.”—D'ALEMBERT.

On the Nature and Structural Characteristics of Cancer, and of those Morbid Growths which may be confounded with it. By JOHN MUELLER, M.D., &c. Translated, with Notes, by CHARLES WEST, M.D., &c. Part I. 8vo. pp. 182.

[Concluded from page 770.]

FROM this description of the several varieties of carcinoma, the author proceeds to the consideration of their development and softening. The former, we have already said, exactly accords with the laws deduced from the development of healthy tissues, and may be understood from the earlier part of this abstract; the latter, which is the result of inflammation, is the precursor of the ulcerated state of cancer. It may occur first in any part of a tumor; either in its centre, when the softened matter, which more or less resembles pus, occupies cavities in the interior of the mass; or on its surface, when the different elements of cancer are discharged from an ulcer, from which there commonly shoots forth a cancerous fungus.

The examination of the chemical characters of the different kinds of carcinoma shews that the greater part of the material of which they are composed is a substance similar to albumen, and insoluble by boiling. The gelatine they sometimes contain is only dependent on the cellular tissue in them. Caseine and fat are also occasional, but by no means essential constituents.

The ultimate conclusions at which the author has arrived may be thus briefly stated.

1. Carcinoma differs from simple induration not only in its nature, but also in its structure.

2. It differs also in its nature from ulceration of indurated parts.

3. It is no heterologous substance, and the minutest elements of its tissue do not differ in any important respect

from the constituents of benignant growths, and of the primitive tissues of the embryo.

4. Neither does it (independently of the sanies) possess any peculiar chemical constituents.

5. The peculiar nature of the destructive and productive activity of carcinoma does, however, determine in it general anatomical characters which may, in most cases, be distinguished with the naked eye, especially the destruction, or transformation into the same new mass, of all the adjacent tissues.

6. The development of carcinoma is the result of a diseased state of the vegetative process, which, whether general or local in the first instance, always tends to involve the whole constitution.

7. Although in most instances a general disposition to carcinoma exists from the time of its commencement as a local disease, yet it must be owned that a local disposition may give rise to carcinoma, which may afterwards contaminate the whole constitution; and this local disposition has been proved to be, in some instances, the result of certain external agents. (This conclusion is especially supported by the phenomena of chimney-sweepers' cancer, which would appear to be much more clearly known in this country than in Germany.)

8. Some tumors which by nature are not carcinomatous, and part of the character of which it is to remain local, may, under certain circumstances, originate the local disposition to cancer.

9. Many structures differing from carcinoma have, on the other hand, even though repeatedly mismanaged, no inclination to assume the cancerous disposition; or perhaps they may be more correctly said to have no greater disposition to pass into the carcinomatous state than is possessed by many other healthy tissues.

10. Each form of cancer occurs in persons of all ages and in all organs; but some organs appear to be especially liable to carcinoma at certain periods of life.

Such are the statements, each of which are supported by apposite illustrations, with which the first part of the work is concluded. The results of this portion of the author's investigations, if they do not go to establish any very important general principles, yet show what may be expected in this direction of inquiry,

in which he has at least the honour of being the first to make any way. It was scarcely to be expected that the microscope or chemistry should discover the essential nature of cancer; it must be sufficient if they have established more nearly its diagnosis from other growths, which differ from it as widely in their nature as, to the unassisted senses, they have hitherto seemed like it. This, however, is possible only by the same methods of investigation being applied to each other variety of tumor as to cancer itself. The results of such investigations form the second part of the work, which commences with the account of cartilaginous tumors, enchondroma, or chondroid sarcoma.

Enchondroma is a fungoid growth proceeding from bones or from soft parts, as, for instance, from glands, and curable by amputation. It forms a spheroidal, not lobulated tumor, which, when it appears in soft parts, is furnished with a thin covering resembling cellular tissue, but which, in the bones, where its occurrence is more frequent, retains the periosteum as its investing membrane. This disease presents itself as a soft expansion of the bone, developed either within its interior, or, more rarely, from its periphery. The articular surfaces of the bones are usually but very little altered by this disease; often they are not at all affected, even in instances in which the tumor has acquired a very large size, and it is very rare for the disease to advance beyond the articular surface, or for two tumors, when they arise from adjacent bones, to become confounded.

Enchondroma is usually developed slowly, and without pain or injury, more than that caused by the distension, to the surrounding soft parts. Its contents are soft, usually mixed with small spiculae of bone, and, when cut through, it commonly displays two constituents: a fibro-membranous substance, and a grey pellucid substance like cartilage or very firm jelly, or the hyaloid cartilage of cartilaginous fishes. The former forms both the large and small cells, which contain the latter, in friable and easily removeable masses. The intervention of the membranous structures with the masses imparts to enchondroma a conglomerated appearance, which does not occur in any other form of exostosis, and which is indicated by the slight inequalities which may be seen on its surface.

The fibro-membranous part appears under the microscope to be composed of an interweaving of transparent fibres; the hyaloid masses are in every respect precisely similar to true cartilage, and the whole tumor would exactly resemble a mass of cartilage, but for the membranous structures by which it is intersected. So close is the similarity, or, as it may be termed, the identity of the transparent parts of an enchondroma of the bones, and cartilage, both in microscopic structure and in chemical composition, that we pass over this portion of the work, which merely illustrates their common characters, and resume it at the history of the development of this variety of growths. There appears also in this respect to be a close analogy between it and cartilage; the chief, if not the only real difference, being the persistence in the morbid cartilage of that cellular structure, which exists in the embryonic state of the natural; a circumstance which, as already mentioned, is also illustrated in the formation of many other tumors. The most remarkable circumstances connected with these growths are the great length of time that they may exist without producing any serious mischief, (upwards of thirty years for example), the almost complete absence of pain, and the absence of any degeneration of the surrounding parts. When inflamed, as they may be in consequence of the distension of the neighbouring parts or of injury, they become painful, burst, and suppurate, and often excite necrosis of the bone on which they are situated; but, except by their irritation, they do not appear, even in this state, to affect the constitution.

The local causes of enchondroma are serious injuries to the vitality of the bones, and, in many instances, mechanical violence; but, in some cases, it cannot be regarded as a purely local disease affecting the bones, since it affects numerous parts of the osseous system coincidentally, and proves itself to depend on the existence of some general cause. Enchondroma occurs most frequently during childhood, as scrofula does, though there is no reason to believe that the same diathesis tends to the development of both. Its removal from the body is never followed by a return of the growth.

The diagnosis of enchondroma may be perfectly established. It has no resemblance in structure to any variety of

cancer of bone; albumen forms the basis of all of them, while it yields chondrine. If medullary cancer is developed in the interior of a bone, it very rarely produces perforation or expansion, as enchondroma does. It resembles scirrhus only in hardness: the contents of the cavities in cancer alveolaris are also widely different, both microscopically and chemically, from the transparent substance in the cells of this growth. Neither can there be any difficulty in discriminating between enchondroma and the fibrous tumor of bone, or the osteoid or bony tumor, or those other albuminous and more or less evidently fibrous growths that pass under the name of osteo-sarcoma, or hydatids in bone, by which its shell is sometimes expanded, as it is in enchondroma.

The next section treats of adipose tumors in three classes, including the varieties of lipoma, of adipose cysts, and of the laminated fatty tumor.

Most specimens of lobulated lipoma resemble in structure ordinary adipose tissue; their cells are of a round or oval shape, and the only distinction between the two consists in the former being made up of a mass of these adipose cells, inclosed by an investment of thickened cellular tissue, while the different lobuli are separated from each other by thinner membranous septa. The varieties are, *L. simplex*, the common fatty tumor; *L. mixtum*, which is of much firmer consistence than the preceding, from the development of strong septa in its interior; and *L. arborescens*, the well-known branching processes that grow into the interior of joints, and especially of the knee-joint.

Adipose cysts include such as are most common in the ovaries, containing fat in globules, or in a fluid state, with hair growing from follicles in their walls, and the cysts beneath the skin, which are formed of enlarged and obstructed sebaceous follicles.

Laminated adipose tumor or cholesteatoma is a non-lobulated tumor, composed of concentric layers of polyedrous cells, which have a lustre like mother-of-pearl. It is of the consistence of tallow, and is usually invested with a thin membrane, which forms a complete cyst. The fat which it contains is not found exclusively within the cells, but is likewise deposited in their interstices.

The mass of cholesteatoma, which the author has seen eight times, is soft,

semi-transparent, of the colour of white wax, but glistening, like mother-of-pearl. When dried it shrinks much, and becomes yellow. Its laminae are usually not thicker than the finest paper, and in most cases are arranged concentrically, and are easily separable. The tumors are generally more or less round or oval, with small nodules on their surface.

With the microscope the finer elements of cholesteatoma are found to be a cellular tissue composed of irregular polyedrical cells, like pigment cells, which constitute the laminae, and a crystalline fat deposited in the interspaces between those laminae. The cellular tissue is somewhat similar to the polyedrous cellular tissue of the fat of the sheep; they are easily separated, and when isolated are very transparent and pale, not containing either nuclei or granules: their basis is formed by an animal matter quite distinct from fat, and not at all soluble in either alcohol or ether.

The crystals between the layers of cells are of two kinds, tabular and lamellar; the former are most numerous, and they vary considerably in both length and breadth; they probably consist of pure cholesterine. The others are collected into little bundles of lamellae, like aciculae of stearine, but their real form is that of lamellae.

All parts of the body appear to be liable to cholesteatoma; it has been found in the bones, in the brain, between the uterus and rectum, in the mammary gland, and in subcutaneous cysts. It is most frequent in the brain; it occurs either in cysts, usually formed of very fine fibrous membrane, or on the surface of ulcers, as in urinary fistulae, in which it was twice found by M. Dupuytren.

Cholesteatoma is destitute of blood-vessels, and its increase probably takes place by the deposit of successive lamellae, as cuticle and the yolk-cells in the yolk-bag do. It is by no means a malignant disease, nor attended with fatal consequences, save in some cases in which its presence in the brain has caused death by pressure.

The last section of the work is on compound cystoid and cysto-sarcomatous growths. On the former the author says, that although he cannot coincide with Dr. Hodgkin in his attempt to extend the principle of the formation of com-

pound serous cysts to explain the structure of sarcomatous and carcinomatous tumors, yet in regard to the formation of the compound cysts which occur in the internal generative organs of the female, his observations perfectly coincide with those of our esteemed countryman. On this subject, therefore, we need make no abstract of Müller's observations; on the next subject also, of cysto-sarcomatous growths, we doubt whether the remarks of Müller will not be in some measure modified when he sees those of Sir Benjamin Brodie, which were lately published in this journal, in an admirable lecture on sero-cystic sarcoma.

Müller applies the name of cysto-sarcoma to such tumors as, while they are principally composed of a more or less firm, fibrous, and vascular mass, are yet invariably found to contain solitary cysts in their substance. They are most frequent in the generative organs; either in the ovaries or near them, in the testicle, and in the female breast. He notices three forms—the simple cysto-sarcoma, *C. proliferum*, and cysto-sarcoma with foliated warty excrescences from its cysts. In the first, the cysts have each their distinct membrane, the inner wall of which is simple and smooth: to this belong several cases described by Sir A. Cooper as hydatid tumors of the female breast. In the second, the sarcomatous mass is the same fibrous texture, but the cysts within it contain younger cysts in their interior, which are attached to their walls by pedicles; a form of morbid growth which may be regarded as a repetition of the *cystis proliferata*, but imbedded in a sarcomatous mass, which constitutes the chief part of the tumor.

The third form, *C. phyllodes*, differs greatly from the other two. The tumor forms a large firm mass, with a more or less uneven surface. The fibrous substance of which it is chiefly composed is greyish-white, and very hard. Large portions of the tumor are made up entirely of this mass, but in some parts are cavities or clefts not lined with a distinct membrane. These cavities contain but little fluid; for either their hard and polished parietes are in close apposition, or a number of firm irregular laminae sprout from the mass, and form the walls of the fissures, or excrescences of a foliated or wart-like form sprout from the bottom and fill up their inte-

rior. The excrescences are perfectly smooth, and never contain cysts or cells. Sometimes they are broad, sessile, and much indented; others have a more slender base, and somewhat resemble cauliflower condylomata. They are always formed of the same firm, apparently fibro-cartilaginous matter, as the non-hydrated portion of the tumor.

The firm mass of the tumor has an indistinctly fibrous structure, but contains neither cells nor cartilage-corpuscles. It is albuminous, and firmer than any other tumor of the same constitution. Such tumors attain sometimes an enormous size, but they are decidedly innocent; they occur earlier than it is usual for cancer to develop itself, and have little tendency to become adherent. They are not disposed to soften internally, but continue to grow, till, having attained an enormous size, they burst, and an ill-looking suppurating fungus forms upon their surface.

Such are the chief contents of this first portion of Professor Müller's work. As the first fruits of the new mode of investigating this most intricate subject, the results must be acceptable to all; and all will grant that, if the results are not such as to have exhausted the greater part of the questions respecting the nature of morbid growths, the fault lies in the difficulty of the inquiries rather than in the incompetency of the observer, who, if it had been in the power of any man living, would have unravelled the whole subject.

We cannot conclude without confirming the praise which has been generally awarded to Dr. West for the excellence of his translation; and we sincerely hope that the abstract we have given will tempt many of our readers to make themselves masters of the whole work.

MEDICAL GAZETTE.

Friday, August 21, 1840.

"Licet omnibus, licet etiam mihi, dignitatem
Artis Medicæ tueri; potestas modo veniendi in
publicum sit, dicendi periculum non recuso."
CICERO.

MANAGEMENT OF THE POOR IN SCOTLAND.

In our number of the 17th of July, we noticed the appearance of a second

edition of Dr. Alison's admirable essay on the management of the poor in Scotland. He has also published another pamphlet, in the shape of a reply to a defender of the present system, where he again advocates the cause of the poor, and shows that it is identical with the true interests of the rich*.

When Dr. Alison undertook the task of convincing the people of Scotland that their national system of charity is essentially defective, and as inconsistent with religion and reason as it is repugnant to the more generous instincts of our nature, he expected to meet with a vigorous opposition; and his expectations were, of course, fulfilled. It is satisfactory, however, to find that the enemies of the proposed improvement have not been able to hit upon any new sophisms with which to perplex the minds of the public; no brilliant economist has arisen, amidst the strife of words, to demonstrate by some fresh argument that private beneficence is very bad, and public charity worse still. In fact, Malthus's hypothesis, that the English Poor Laws were a bounty on population, was so remarkably at variance with facts, that its own parent was obliged to give it up. The other fears of the economists are more easily assuaged; and, as they have not been able to discover any new grounds for apprehension, it is to be hoped that the common sense and good feeling of mankind will obtain fair play in Scotland. One fear, indeed, of your more trembling utilitarian has been knocked on the head by a Poor Law Commissioner, and an Assistant ditto. The apprehension has been insinuated, that if workhouses are made too comfortable, there might be a run upon them; and the practical deduction is, find out the minimum of

* Reply to the pamphlet entitled "Proposed alteration of the Scottish Poor Law considered and commented on; by David Monypenny, Esq., of Pitmilny." By William Pulteney Alison, M.D. F.R.S.E., &c.

food on which the poorest cottager exists, and let the workhouse diet be less. To this Mr. Nicholls answers, that though the inmates of our workhouses are generally better fed than labourers, the irksomeness of the discipline, and confinement, produces such a disinclination to enter them, that nothing short of absolute necessity can compel able-bodied labourers to take refuge there. Mr. Revans goes much farther. He found a workhouse in Nottinghamshire, where the inmates lived in luxury, yet able-bodied persons very rarely applied for admission. How was this? Let the master answer the question. "Oh, sir," said he, "*I keep the key of the door*, and I very seldom allow the able-bodied people to go out, which they don't like; so if they can possibly live out they won't come in." This is exactly what every man of sense would have expected; there never was, and never can be, a run upon the workhouses, and destitution alone drives the poor into these receptacles; yet the half-starvation, and the mean haggling about the little comforts due to age and infirmity, to be found in too many of them, evidently rest on the false assumption, that for the sake of a few ounces of food the poor will voluntarily enter a prison.

When the reasoners of Scotland are convinced that Poor Laws are not a bounty on population, and that workhouses are not dangerously attractive, two great obstacles to the cause of humanity will have been removed;—our neighbours will cease to pride themselves on the smallness of the allowances they grant the poor; and workhouses and compulsory assessments will be seen throughout Scotland.

Whether this salutary change should be effected by a formal extension of the English system to Scotland, or by an improved administration of the Scottish law, Dr. Alison does not profess himself able to determine. The form does not

seem to us of much importance; for even the Scottish system, cold and lifeless as it seems, contains within it the germ of a better method—the statue is in the block, and wants but a Phidias to draw it out.*

It is clear, that, substantially, any real and great improvement must approximate the Scottish system very closely to the English one. Such a change could not be adopted without reluctance by those who have been taught that to drive misery out of sight is a good substitute for relieving it. The Laputan Professor would not willingly have renounced his scheme of extracting sun-beams from cucumbers; and your economist would not easily give up the hope of deriving happiness from Malthusianism. When introducing the poor-law, it would not be necessary to bring in with it any of the uncommendable parts of the old system in England, such as the paying wages out of the rates, or the complex law of settlement, with its attendant litigation. But granting that the abuses were introduced with the uses, what humane man would not prefer the English Poor Law, as formerly managed in the worst parish, to a system which permits aged and disabled persons of good character to linger on through a life of protracted starvation? Mr. R. Chambers, quoted by Dr. Alison, says, "One or two slender meals of porridge or potatoes, with occasionally a little tea, or a bowl of thin broth, form the diet of a day with most of these people. It appears to be a system of protracted starvation." Again, "The female field-labourers get ten-pence a day, which barely suffices to support and clothe them during the time when they have work. In winter, when there is no work, they have no resource but charity. But for

* By the decision of the Court of Session in 1804, the able-bodied poor in Scotland might be relieved by assessment; but this judgment is not acted upon.

the broth pots of their neighbours, they would starve outright."

"Such is the state of the poor in a small rural town in Scotland, under a system of management, which has been often represented as peculiarly calculated to *keep down pauperism*, and, in contrast with which, the English system is believed to be only a monstrous abuse*."

It would be curious to persons not accustomed to economic ways of thinking, to learn that the report on pauperism in Scotland lately made to the General Assembly, though it contains minute details as to the funds raised for the relief of the poor, and the modes of applying them, "does not contain one syllable of information as to the *condition*—as to the habits, sufferings, or privations, either of those who are relieved, or of that large class of equally indigent persons in Scotland [who are excluded from participating in them.]" Pauperism, too, is represented in this report as a disease; and when it amounts to 3 or 4 per cent. of the population, it is called an intolerable burden. It appears, however, from the statement by Mr. R. Chambers quoted above, that, in the small town he describes, during a severe winter, 25 per cent. of the population are obliged to depend on the charity of their neighbours; but the report to the General Assembly means, of course, by paupers, those only who cannot be thrust out of sight. Our own answer to this excessive clamour about pauperism would be a simple one. The wages of labour, according to the economists, are settled by the haggling of the market; but agricultural labourers have no solid protection against the parsimonious offers of their employers, save public opinion; and this is so scanty a shield, that their wages are insufficient to do more than provide for the pressing wants of the

passing day. Hence, they need the occasional assistance of the charitable to supply the deficiency of their income; and fortunate is it for the community, where benevolence forms part of the law, and the indigent can claim the succour which they require. But, whether the aid is privately or publicly given, the rich have little reason to repine; for the total remuneration given to the agricultural labourer in the shape of medical advice, extra food, &c., added to his wages, is so small, that, in equity, it cannot be considered as more than a fraction of his deserts.

The authors of such reports evidently suppose, as Dr. Alison observes, that the poor are to "cease out of the land;" but all that severity can do is to sweep indigence from the streets, and drive it to its unseen hovel!

Mr. Monypenny does not support Malthus's original theory that the Poor Laws are a premium on population; indeed, it was time to abandon a theory which its author could no longer defend. But, though Dr. Alison has shown by the evidence of facts that the poorest people marry the earliest, his antagonist answers by something which Dr. Chalmers is "inclined to think." But facts are stubborn things; and if you dread early marriages so amazingly, you should recollect that the poor of Edinburgh and Glasgow, the *Chiffonniers* of Paris, and the *Lazzaroni* of Naples, marry earlier than the well-fed artisans of England and Holland. Nevertheless, Mr. Monypenny, though not a defender of Malthus's erroneous theory, reminds us of Lord Brougham's opinion, that the old Poor Laws of England afforded "the greatest stimulus to population which the art of man could devise," &c. &c. — which is exactly Malthus's mistake in other words.

We are surprised, however, that Dr. Alison does not advert to the immorality and misery produced by the discourage-

* Alison, Reply, &c. p. 22 and 23.

ment of marriage. Horace mentions among the duties of a legislator in early times

Concubitu prohibere vago, dare jura maritis;

and we should relapse into more than pristine barbarism, if the community at large adopted the counsels of our modern sages, and deferred marriage till it was quite prudent in a pecuniary view. How can the marriages of the labouring classes be any thing but improvident, in the economist sense of the word? Hodge takes Andrey to wife, in the hope that the labour of his hands will maintain her and their six children. It usually does so; if it does not, the community bears the burden, to the sore grief of the utilitarian. But does not the coldest calculator see, that if labourers were to agree, in his cant phrase, not to overstock the labour market, his selfish views would be more utterly defeated than by all the surplus population in the world? In other words, the rise in the price of labour would be so great, as to outweigh all the money saved in payments to widows and orphans. "By Day and Night! they were indeed irresistible so; not to be compelled by law or war; might make their own terms with the richer classes, and defy the world*!" Before taking leave of the subject for the present occasion, we must express our satisfaction at finding that Dr. Alison's exertions have awakened a kindred spirit,—that the seed which he has sown has fallen on no barren ground. Many correspondents have informed him that their opinions have been changed or fixed by his statements and reasonings. The extracts from some of their letters which he gives are couched in an admirable tone.

We are highly gratified also by his appreciation of our labours in a good cause; it is a pleasant thing *laudari à laudato viro†*.

MEDICAL REFORM.

AFTER allowing the Session of Parliament (by no means a short one) to pass away without any step being taken towards the much-talked-of medical reform, the 10th of August saw no less than two grandiloquent notices:—

No. 1.—"Medical Profession Bill for the Registration of Medical Practitioners, and for the establishment of a College of Medicine, and for enabling the Fellows of the College to practise Medicine in all or any of its branches, and hold any medical appointments whatsoever, in any part whatsoever of the United Kingdom. Ordered to be brought in by Mr. Warburton, Mr. Wakley, and Mr. Hawes."

No. 2.—"Bill for the Establishment of a National Faculty of Medicine, comprising its executive departments, one for England, the second for Ireland, and the third for Scotland; the senates, or governing bodies, to be elected, in the first instance, by those members of the existing Medical Colleges and Universities who may become assenting parties to the new institution, and afterwards the elections to be confined to persons who may possess the diplomas or degrees of the National Faculty.

Of these we shall only say, that, allowing the whole session to pass without bringing in one bill, and then on the last day, when nothing could be done, giving notice of two, looks very like humbug. There are various things in our profession that we should like to see altered; but, with our experience of the past, we have no confidence whatever in any thing either Mr. Warburton or Mr. Wakley are likely to do. The feelings of both are too much involved to admit of their legislating on sound principles.

who have made comparative observations and reflected on this subject, as to the general question of a fixed, legal, and liberal provision for the poor, we have, I believe, a very fair exponent in the leading articles of the *MEDICAL GAZETTE*, a journal which all my medical readers will know to be patronized and supported by a large proportion of the most respectable medical practitioners, both in London and in the provincial towns of England."

* Carlyle's *Chartism*, p. 110.

† Alison, *Reply, &c.*, pp. 44, 45, 47. At p. 44, he says, "Of the general opinion of those medical men

DEATH OF DR. TODD, OF BRIGHTON.

DIED, on the 4th of August, Dr. Todd of Brighton, at the neighbouring village of Hurst, after having been confined to his bed for six months. He was 50 years of age, and had long been in delicate health. Dr. Todd was a most skilful physician, and an ardent cultivator of physiology. He had long been engaged in an extensive series of microscopical observations on the subject of his favourite science; and had he lived a few years longer, there is little doubt that he would have been able to explain and illustrate some of the most minute processes employed by nature in the regeneration of wounded parts.

Dr. Todd was one of the few men who are in advance of the age in which they live, and, consequently, his loss to the profession is not easy to be repaired.

OF THE CEREBELLUM.

DR. GREENE brought forward the case of a young man, æt. 20, in whom one bone of the cerebellum was deficient; the individual was deaf and dumb from his birth. He died upon the twelfth day, of fever, in the Hardwicke Hospital; he was a well made, muscular young man, with perfect use of his limbs; the genital organs were well developed, and cicatrices of ulcers existed in each groin. The left lobe of the cerebellum was altogether deficient; the right lobe and corresponding crus cerebelli were healthy, but the left crus consisted merely of a small tubercle connected with the pons. The crus cerebri of the left side was smaller than that of the right, and the annular protuberance, owing to the different development of its left side, was irregular in its form, and placed obliquely; its longest diameter being from behind forwards and to the right side. The origins of the nerves were normal; the right occipital fossa was remarkably shallow, and the foramen magnum was placed obliquely, its antero-posterior diameter being thrown towards the right side. Dr. Greene alluded to two cases recorded by Cruveilhier, of deficiency of both lobes of the cerebellum, in each of which there was loss of the power of motion in the lower limbs. (Museum, Richmond Hospital.)

—*Dublin Journal of Medical Science.*

SUNFLOWERS IN RUSSIA.

WHEN fertile spots occur, every garden is filled with strong beds of the sunflower; and on inquiring into the use made of this plant, we are given to understand that it is here raised chiefly for the oil expressed from it. But it is also of use for many other purposes. In the market-places of the larger towns we often found the people

eating the seeds, which, when boiled in water, taste not unlike the Indian corn eaten by the Turks. In some districts of Russia the seeds are employed with great success in fattening poultry; they are also said to increase the number of eggs more than any other kind of grain. Pheasants and partridges eat them with great avidity, and find the same effects from them as other birds. The dried leaves are given to cattle in place of straw, and the withered stalks are said to produce a considerable quantity of alkali. With so many valuable properties, it did not surprise us to see the sunflower cultivated in every cottage garden. We found it throughout the whole of the centre and south of Russia.—*Bremner's Excursions in the Interior of Russia.*

RECEIVED FOR REVIEW.

Practical Observations on the Causes and Treatment of Curvatures of the Spine, &c. By Samuel Hare, surgeon, London and Leeds. 8vo. pp. 151, with 11 plates. (The title-page has no date, but the preface is dated 29th September, 1838.)

An Atlas of Plates illustrative of the Principles and Practice of Obstetric Medicine and Surgery, with descriptive letterpress, by F. Ramsbotham, M.D. Nos. 4, 5, 6, and 7. Churchill, 1840.

Trifles from my Portfolio, or Recollections of Scenes and Small Adventures during Twenty-nine Years' Military Service, &c. &c. By a Staff-surgeon. Vols. 1 and 2. Quebec, Neilson, 1839.

An Address upon Laying the Foundation Stone of the Queen's Hospital, Birmingham, June 18, 1840, &c. &c. By Vaughan Thomas, B.D. Vicar of Stonleigh, &c. &c. Oxford, Baxter, 1840.

The Horley Green Mineral Water; its new Chemical Analysis and Medicinal Uses. By W. Alexander, M.D. &c. &c. London, Longman, 1840.

ROYAL COLLEGE OF SURGEONS IN LONDON.

LIST OF GENTLEMEN ADMITTED MEMBERS

Friday, August 7, 1840.

T. B. Johnstone.—J. S. Mansford.—R. James
—A. Dyer.—H. A. Ash.—J. Mahaffy.—H. N. Elton.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, Aug. 13.

B. Kirby, Banbury.—W. Way, Tonbridge Wells.
—E. Jones, Pailen, Warwick.—F. H. Woodforde,
Ansford, Somerset.—E. A. Parkes.—F. Williams,
Bristol.

NOTICE.

We have not received the other paper alluded to by Mr. J. A.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, AUGUST 28, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

INJURIES OF THE HEAD, *consequences of.*
ABSCESS OF THE LIVER—HERNIA OF
THE BRAIN—FUNGUS OF THE DURA
MATER.

DISEASES AND INJURIES OF THE SPINE—
SPINA BIFIDA. DISLOCATIONS *from violence.*—Occiput on the atlas: Atlas upon the axis—*Their Nature and Treatment.*

ABSCESS OF THE LIVER, CONSEQUENT
UPON INJURIES OF THE BRAIN.

A CONDITION which is not unfrequently a concomitant of injuries of the head is abscess of the liver. In many of these cases there is no sign of direct injury to that viscus, and it has been usual to refer it to general concussion, or some inexplicable sympathy. Of late it has been observed that it occurs most commonly when there is a suppurating wound, and this circumstance induced Dance to maintain that it was a consequence of phlebitis; and as the disease occurs from wounds of other organs, without concussion, he was still more fortified in his opinion. But I must guard you against the adoption of an exclusive opinion, by stating, at the same time, that abscess of the liver has often been seen as a consequence of disease of the brain and its membranes, even when there was no violence, or phlebitis. In some cases you may observe a contusion over the liver, and then it is fair to assume that the direct injury has excited inflammation and abscess: in other cases, the tension, the re-

sistance, the painful condition of the right hypochondrium, and the bilious vomiting, would fairly lead to the conclusion, that although there may be no direct injury, the organ must have suffered from general concussion, during which, the liver, from its great bulk and mobility, has, more than any other organ, been injured. The older surgeons had a different mode of explaining this coexistence: Bertrandi supposed that after every violent concussion of the brain the blood flowed in increased quantity towards that organ, and returned in greater quantity through the jugular veins towards the heart, so that the superior cava, by bringing a larger column of blood towards the heart, physically opposed the return of blood through the inferior cava. There is, therefore, a reflux towards the hepatic veins; the stagnation thus produced occasions inflammation, which terminates in suppuration or gangrene. Pouteau objected to this theory, that there was no proof that a greater quantity of blood was directed towards the brain, or by the superior cava towards the heart. He maintained that as a consequence of concussion the blood found its way less easily into the brain; that the carotids and vertebrals become distended; that the blood finding an obstacle in the branches of the ascending aorta, passes on in an increased quantity to the descending aorta, and to the organs supplied by it: that the liver being one of the first of these, it becomes gorged or congested, and inflammation ending in suppuration may be the result. Although in each explanation the ultimate result is nearly the same, congestion of the liver—in the one case by the arterial, in the other by the venous blood, yet absolute proof is as much wanting in one as the other; and to my mind both explanations are unsatisfactory. As to Bertrandi's statement, that at the confluence of the cavae there is not the smallest angle, (*ne quidem ipsarum venarum minimus angulus*), it is totally in-

correct. We know that the orifices of those two veins are not directly opposed to each other, and that the columns of blood do not form mutual obstacles. Desault, who long studied this subject, rejected both explanations; but I cannot help saying that the explanation he has left is also unsatisfactory: he says, "that an unknown real relation exists between the brain and the liver, a more intimate relation than exists between other viscera; that by this means, an affection of the first almost always determines in the functions of the second an alteration, which may, in the dead body, be demonstrated by traces of engorgement, of inflammation, of abscess; in the living body by nausea, bilious vomiting, &c." All practitioners, says he, do not equally admit the immediate connexion of the two viscera, and the affection of the liver in wounds of the head does not seem to them to be more than the effect of a general shock; but then why does the general shock affect a particular organ? why do not other organs suffer? By this simple question he conceived all difficulty removed; and concluded that the nervous system is the principal agent of communication, upon which the circulation exercises only an indirect influence.

I believe that most commonly the affection of the liver is a consequence of general concussion; that it is in the disposition and structure of the organ that we should seek for an explanation of the relation which exists between its affections and those of the brain, instead of adopting hydraulic reasons deduced from an imaginary derangement of the circulation. Of the three cases of the kind which I have seen, in two there was absolute destruction of the tissue of the liver; and certainly a very large majority of cases of concussion or other injury of the brain have no hepatic disease.

After what has been said, you are, I trust, convinced that these affections of the liver may be consequent upon direct contusion, upon general concussion, upon phlebitis, and possibly upon an inexplicable sympathy, such as described by Desault. These abscesses are developed sometimes in an insensible manner, sometimes they occasion more or less marked inflammatory symptoms, sometimes the purulent collections are superficial, but in the greater number of cases they are deep-seated, in some pervading much, in others little of the organ. They may form in the hepatic region, causing a fluctuating external tumor, which may open outwardly; it may open into the abdominal cavity, the stomach, the intestinal tube, or even the thoracic cavity.

The first object of treatment is to prevent the development of these abscesses, but that is frequently impossible, because

of their latent progress. When symptoms of inflammation are developed in the region of the liver, bleeding and mild purgatives should be used; if the abscess be presented externally, it should be opened; not with a lancet or bistoury, lest there should be no adhesion between the peritoneal surface of the liver and that of the abdomen, in which case the purulent matter might escape into the abdominal cavity, and excite a fatal peritonitis, but with caustic potash, which would excite as much inflammatory action as might be necessary to cause adhesion, when, if necessary, a bistoury might be plunged into it. If the pus be healthy, the chances of the case doing well are much greater than when it is brown. Sometimes the discharge continues long, and exhausts the patient; sometimes it lessens quickly; but even in fortunate cases a fistulous canal is established, and long maintained.

ENCEPHALOCELE,

Or hernia of the brain, is a term which has been applied to tumors formed by a protrusion of a portion of that organ. The protrusion may occur under two different circumstances, constituting two species or varieties; the first occurs commonly in young children, before ossification of the cranium is completed, and is often congenital; the second is often a consequence of injury, the trepan, caries, necrosis, or any thing capable of producing a loss of bony matter; and has been already spoken of. The first is usually seen at the region of the sutures and fontanelles, especially in the occipital region; the second may occur at almost any point of the cranium.

In the greater number of cases the tumor is covered by the dura mater and common integuments; sometimes these coverings are wanting. The tumor so formed is not usually large, seldom exceeding the size of a pigeon's egg, though it may acquire a much greater bulk. I recollect a case in which a large portion of the brain escaped through the posterior fontanel, and constituted a large tumor, which rested on the back of the neck; and there is a cast of a case, in the Museum of the Faculty at Paris, where the entire brain is said to have escaped through the same fontanel; the child lived fifteen hours, and executed its functions like a well-formed child.

It is ordinarily presented in the form of a rounded tumor; soft, without any change of colour of the skin, with very little pain, having pulsations isochronous with those of the pulse. It may be lessened in bulk, and may sometimes completely disappear under pressure. It may be greatly increased under any effort; and this is par-

ticularly seen during crying, struggling, and sneezing or coughing. In some cases, when pressure is made suddenly upon these tumors, nervous symptoms are developed which indicate a suppression of cerebral action; there is loss of the intellectual faculties, momentary paralysis of certain parts, and loss of consciousness; but when the pressure is removed, it resumes its former bulk, and the functions, before deranged, are restored. If we pass the fingers carefully around the base, we can generally make out the edges of the cranial opening through which it has passed. If encephalocele were always simple, the diagnosis would be easy; but, in many cases, it is complicated with hydrocephalus: the tumor may then be semi-transparent, and the motion communicated to the brain, by the pulsation of the arteries at its base, may no longer be perceptible to the touch. But the chances of mistake in diagnosis are increased by a certain similarity which these tumors bear to certain bloody tumors presented in the scalp. Ledran clearly fell into this error; but if you bear in mind that these bloody tumors are not reducible, that pressure upon them excites no cerebral disturbance, and that if we press strongly we feel the bone continuous underneath, there will be little probability of your falling into this error.

So able a surgeon as Boyer maintained that there was nothing mortal about this disease, provided the indolence of the child did not prevent the employment of proper means of protecting the tumor from injury, and causing it to disappear. My experience, though limited, produces in my mind a very different impression; if the tumor be large, the greater number of patients perish. A small tumor is certainly less dangerous than a large one; in the latter a larger quantity of the brain is implicated—a larger sac is exposed to inflammation; the more, therefore, is the probability of its being exposed to external injury, and the greater the difficulty of protecting and containing it. A large tumor we can scarcely hope to cure, because without complete reduction it cannot happen, and we cannot venture to force into the cranium so large a mass as may be presented, because the cavity of the cranium is not dilatable.

Treatment.—When these tumors are covered by the integuments of the cranium, it has been recommended that gentle equable pressure should be applied upon them; and many cases are recorded of the success of this plan of treatment when the tumor is not very large. Salleneuve used sheet-lead for the purpose, and found that the tumor, gradually and constantly compressed by this agent, lessened, and ulti-

mately completely disappeared, so as to allow of ossification being perfected at the point. Whether the cases of success said to be obtained, by this plan, by Salleneuve and Callisen were really encephalocele, or bloody tumors, may admit of some question. The little experience I have had of this plan of treatment, extending to only two cases, where the tumor was small, induces me to entertain considerable doubts of the cases above mentioned, for in neither of my cases could the compression be borne. When the tumor is very large, most surgeons agree in opinion that pressure is perfectly useless, and may have the most serious inconvenience. In such cases, to contain, to sustain, and properly to protect the tumor from injury, is the extent of justifiable treatment. If the protrusion be complicated with hydrocephalus, it has been proposed, first to puncture the tumor, for the purpose of evacuating the fluid it may contain, and afterwards to use compression. Adams mentions five of these cases, of which two were cured by puncture without compression. In one the operation was repeated seven times, the quantity of fluid being less on each successive puncture. Very few men have followed the example of Adams, spite of this apparent success, because such punctures are not made with impunity either in hydrocephalus or spina bifida.

Even when there was no fluid in the sac of these tumors, there have not been wanting persons who have employed, not only puncture, but the ligature; in some of these cases this was evidently done from an erroneous impression, that the tumor did not communicate with the brain; in others it was done advisedly; but the operations have been almost uniformly unsuccessful. Forest (Obs. Chirurg. lib. 3, obs. 7,) operated in this way in a case which he believed to be encephalocele, but which bears strong marks of having been hydrocephalus. The tumor was transparent, and he says, "if hydrocephalus could form a globular tumor it might have been considered a case of this kind." A surgeon who consulted with him mentioned many cases in which the ligature had succeeded, and he employed it. During the first few days the case seemed to go on well, but at the end of a fortnight a slough formed at the summit of the tumor; it was thrown off, and a limpid fluid escaped. From that time the infant began to refuse the breast, and soon died. In 1781 Schneider tied a true encephalocele, with fluid in the sac; the tumor was large and pediculated. At the moment when the ligature was tightened the child cried, but soon became quiet. On the eleventh day the child was observed to be very weak, and in the evening became convulsed, and

in a few hours died. The examination after death proved that a considerable portion of the brain was included in the ligature. The operation of laying open the sac, and endeavouring to reduce or extirpate the protruded portion of brain, has been little more successful. In the thesis of Held is a case of the kind; the patient was a woman of 18; she had in front of the head a tumor of the size of a small hen's egg; it yielded a little on pressure: it was mistaken for a melicerie tumor, and upon the first incision being made for its extirpation, it was discovered that it was formed by a portion of brain which had escaped through the anterior fontanel, together with a couple of ounces of fluid which gushed out. The wound was closed, dressed simply, slight pressure was applied, the brain was reduced, the opening in the cranium completely closed, in the same way as it is accomplished after the application of the trepan. But this single successful case cannot be opposed to the many failures which seem to me decisive as to the operation. The patient had lived 18 years before the operation had been performed, the knife was only used in ignorance, and was laid aside as soon as the nature of the disease was discovered: happily the tumor afterwards bore compression, which has rarely been the case, and all did well; but then, might it not have done as well by simple compression, without incision? Puncture is certainly more rational, for if cautiously made with a small trocar, at a transparent, fluctuating point, the tumor may bear equable pressure, and get well.

Whatever be the operation, or the means of treatment employed, a radical cure is a rare circumstance in congenital encephalocele, which is a malconformation affecting not only the cranium, but probably the brain. Supposing it be thought advisable to abstain from pressure or puncture, and to use only a sustaining and protecting plan, there are certain things to be avoided, especially carrying burdens on the head. In Bennett's case the patient died suddenly whilst carrying a bucket of water on the head.

When the tumor is very large, partially or completely deprived of integument, and the absence of ossification is extensive, the patient is, I think, beyond the resources of our art; either the child is still-born, or dies soon after birth. In those cases a large portion of the brain is found in the distended membranes; the teguments either do not exist, or are extremely thin and deprived of hair, forming a soft, reddish, semi-transparent membrane, which easily gives way.

Hernia of the Cerebellum.—If the portion of the cerebral mass escaping through an

opening, so constituted, be the cerebellum, it has been termed a *parencephalocele*; it is much more rare than the former kind of hernia. A tumor of the size of the fist presented itself at the occiput in a case seen by Isenflamm, which turned out to be the cerebellum, which had escaped through the great occipital foramen. In 1813 a case was presented to Lallement, which he mistook for a fatty tumor; the patient was a robust idiot of the age of 23. The tumor had been long increasing, and was, at the time Lallement examined it, of the size of a hen's egg. He proceeded to extirpate it by circumscribing its base with a circular incision, and then dissecting it away, but suspended the operation in consequence of coming upon the glistening dura mater: the lips of the wound were immediately brought together: the patient was put to bed, and died on the eighth day. It was ascertained that there was a small opening in the occipital bone, through which the dura mater and a portion of both lobes of the cerebellum protruded. Not long after, a case happened to Balfes, but he, recollecting Lallement's case, did not operate; the patient died, and upon examination the case was found to be similar to the preceding. The case mentioned by Bennett is a striking example of the same kind. The treatment of hernia of the cerebellum should be in all respects similar to that of the cerebrum.

FUNGUS TUMORS OF THE DURA MATER.

With hernia of the brain the tumors we are about to consider have not unfrequently been confounded. Louis devoted himself to the study of this subject, and produced a memoir of singular ability, which is contained in the *Memoirs of the Academy of Surgery*. The fault of that memoir is, to have included too many dissimilar productions in one description.

In some of these cases the dura mater alone is the seat of disease, in others the cranium is particularly affected, in others the brain participates. Siebold, resting on a case he had observed, and Graefe on another case, maintained that the disease described by Louis as fungus of the dura mater was, in reality, fungus of the cranial bones, originating in the diploë, extending to both tables, and from thence to the dura mater and the pericranium. Walther based, upon two observations, his belief that fungus of the dura mater was the result of a simultaneous affection of the pericranium, diploë, and meninges. Both Siebold and Walther's descriptions undoubtedly apply to a certain number of cases; the bones may unquestionably be affected independently of the dura mater and the pericranium; still the facts detailed by Louis, by Wenzel, and others,

clearly show that there is a true fungus of the dura mater. In Wenzel's case, in those of Abercrombie, that of Louis, of Chelius, Jauchius, Berard, the tumor was not even adherent to the bone; in that of Hebraard, and in three of Cruveilhier's, the tumor arose from the inner surface of the dura mater. In the plates of Cruveilhier, the tumor of the dura mater may be seen making its way through the cranium. It is unfortunate that the greater number of authors who have written on the subject have based their description on a single case, by which they have fallen into that vice of reasoning so fatal to science, of framing a general law from a particular case. The only person who, for a long period, fairly considered the subject, was Ebermayer.

The disease we are considering is, ordinarily, cancerous; in Rey's case the patient had at the same time cancer of the thigh. In that of Chelius the substance of the tumor was medullary. Cruveilhier delineates six cases, all of which were encephaloid.

There is no particular point of the dura mater for which these productions manifest any decided predilection. Velpeau collected fifty cases for the purpose of exemplifying this: thirteen arose from the parietal (the comparative frequency in this situation has been referred to the glands of Pacchioni), eight from the temporal, seven from the frontal, seven from the orbito-nasal, seven from the occipital region; five from the vertex, three from the vicinity of the petrous portion of the temporal bone, and one from the midst of the falx cerebri. He also shows that it is not peculiar to any age: of forty cases it occurred six times from birth to the tenth year; from twenty to thirty, seven times; from thirty to forty, nine times; from fifty to sixty, five times; and from sixty to eighty, three times. From this it follows that between thirty and fifty it is more frequent than at any other similar period of life: as to sex, of forty-four cases twenty-three were men, and twenty-one women.

Causes.—How these tumors arise it is impossible to say; in many cases they have succeeded to a fall or a blow: these may have been causes of irritation, under the influence of which the disease was developed; but any other kind of irritation, whether of caries, necrosis, or other cause, may equally excite irritation, from which this disease may result.

Symptoms.—The symptoms by which they manifest themselves are more or less equivocal. In a first period there may be no symptoms—at least this is the case in the greater number of persons; some chance circumstances may, however, reveal their existence. The truth is, when

a compressing agent acts very slowly and gradually upon the brain, this organ becomes accustomed to the compression; the compressed portion may be atrophied; and if this portion be not indispensable to the free exercise either of the sensorial or locomotive functions, or the intellectual faculties, the patient and his medical attendant may remain ignorant of the existence of a morbid product in the brain. But sooner or later the compression exercised on the brain becomes a cause of irritation either to the brain itself or its membranes, and then marked symptoms may gradually or suddenly supervene: nothing is more common, in these cases, than to see hemiplegia supervene as instantaneously as in a case of apoplexy. A man of 60, returning home, suddenly fell down, insensible, upon the road; when consciousness returned he found the right side of his body paralysed. He was treated for three months, during which no other symptom was manifested than hemiplegia, without rigidity: during the next fortnight his temper was insufferable, he swore unceasingly; but otherwise his intellectual faculties were acute enough: at the end of that time he died. At the sides of the falx, corresponding to the middle lobe, attached to the inner surface of the dura mater, was an enormous cancerous tumor. It is scarcely possible to conceive that this tumor commenced its development at or after the moment of the accident; it is easier to believe that the brain had long borne an increasing compression, but that exceeding a certain point, the equilibrium was disturbed, and the symptoms of compression manifested. In the greater number of cases, and especially when the tumor occupies the base, the signs of compression come on gradually; sensation and motion are diminished, and at last extinguished, in the limbs corresponding to the part of the brain which is compressed; the intellectual faculties are blunted: it may end in imbecility and hemiplegia. This gradual and progressive course of the signs of cerebral compression usually enables us to distinguish between cancerous and apoplectic compression; but there are cases in which error in diagnosis as to the cause of compression is almost inevitable. Still it is necessary for us to point out what are the ordinary symptoms of this disease: head-ache and lancinating pain, which often precede its external manifestation, are too vague to be of much assistance in diagnosis; they are often wanting when the disease exists, they often occur when it does not; the other symptoms are equally vague: in fact, until an inequality appears under the scalp, it is scarcely possible to make out its existence: then the tumor, some-

times rounded and firm, more frequently irregular, sometimes soft and fungous, immovable, though not adherent to the skin, may be the seat of pulsation. If suddenly compressed, it more or less completely disappears, but at the same moment may produce paralysis. Usually on slight pressure it yields a sort of crepitating sensation, and is the seat of a pricking or pungent pain, which is often very distressing. When all these characters are present, it is not easy to mistake the disease; but it is rare that they are. The pulsations are often absent, and often exist in erectile tumors and encephalocele; and if a hernial tumor be returned suddenly into the cranial cavity, it occasions paralysis: but then a hernia of the brain is most commonly seen in infants, and erectile tumors do not often exceed a certain size. When the fungus makes its way into the orbit, as it did in Petit's case, or into the nose, as in those of Berard and Rostan, an error may easily happen.

Prognosis.—Cancerous tumors of the dura mater, are, at present, regarded as incurable; but the bloody tumors, mentioned by Camerarius and Abernethy, may be cured, so may those which are syphilitic; still, in many cases, several years pass before they approach a fatal termination. In Graefe's case the disease had existed thirty-seven years; in Schneider's five years; in Robins's forty years; in Voisin's case more than thirty years; in Thibault's ten, and in Bisset's fifteen years; and when it terminates in death, it is less by its pressure than by lighting up irritation or inflammation in the brain, which may give rise to apoplexy.

Treatment.—As to treatment, we can do nothing if the tumor be under the dura mater, because in the first period no signs manifest its existence; in the second, if there be any, they are equivocal, and, because if we ascertained their existence, we have nothing to oppose to them. They have never disappeared by resolution, by suppuration, or by compression. Caustics and ligature, or excision, are the only means which we shall examine. Five of the six treated by caustics died, (Ebermayer) and Eck's case, if cured at all, was certainly an equivocal one: Ficker's case, in which the ligature was used, was a doubtful one. Extirpation has had partial but scarcely any complete success, and always aggravates the patient's suffering. The tendency to reproduction appears to be quite as decided as in cancer of other parts, and when we associate with this the great dangers attending the operation, we cannot wonder that it is rarely attempted. If it be done, the incisions should include not only the diseased but a portion of the healthy structures. If it occupy only the bone, the diseased parts must be removed with a trepan

or saw, or both. If we have excised a portion of the dura mater, it is very important to support the brain with a piece of soft lint. In Berard's case, so soon as the pressure made by the fungus was removed the patient became insensible, and was only restored by making pressure anew. Indeed, many cases testify that the sudden removal of an agent which has long compressed the brain is not borne by that organ with impunity. Under all circumstances we cannot hesitate to say that there are few or no diseases over which our art exercises less influence, than over the one we are considering.

INJURIES AND DISEASES OF THE SPINE.

Experience has long established the axiom, that in proportion as an organ is more frequently employed, is it more subject to disease. If we contemplate in man the different parts of the nervous system, it becomes evident that the brain is the part of that system whose acts are most frequently repeated; whether we regard it in relation to the influence which it continually exercises upon the operations which contribute to the preservation of life, or its direct action in the production of the intellectual functions. It is hardly necessary to point out how great is the difference in this respect between man and the lower animals; in which the spinal system takes precedence over that of the brain. The difference observed in the frequency of diseases of the brain, as compared with those of the cord in man, appears to me to result very naturally from the physiological condition in which those organs are placed. In horses, and other animals, on the contrary, I am assured that softening of the spinal marrow is much more frequent than a similar condition of the brain. In man the occurrence of extravasation of blood in this organ, except as a consequence of direct or indirect violence, is unfrequent; whilst in beasts of burden we are informed by Dupuy that it is much more frequent. The examples of disease of the spinal cord, collected up to the present moment, are not sufficiently numerous to enable us to appreciate the influence which age or sex may exercise on their development.

The greater number of the injuries of the spine, and the accidents which occasioned them, were known to Hippocrates; to Celsus, who says, when the injury affects the superior cervical portion, death is rapid; to Aretæus, who says, that when paralysis is caused by disease of the cord, it is always on the same side as the disease; to Galen, who particularizes the symptoms consequent upon disease of particular regions of the spine; and the moderns have not gone much farther.

We must first consider certain vices of conformation of the spine, to which the attention of the surgeon is often called: before I do so, it may be as well barely to mention that there may be total absence of the whole of the central nervous system. Clarke's case, in the *Philosophical Transactions* for 1793, proves this. So do those of Morgagni, *Epist.* 12, and others. The many cases on record contain no example of the presence of the brain in the absence of the spinal cord, except those of Rayger, which are of doubtful authority; but they contain examples of presence of the spinal cord with absence of the brain.

SPINA BIFIDA.

We will first consider spina bifida, which is a comparatively frequent disease. Of 132 infants possessing some defect 22 presented this disease. In Chaussier's report we see that, after club-foot, it has been the most frequent congenital malformation. In a single year Billard saw seven cases at the *Hospice des Enfants-Trouvés*.

It is characterized by one or more tumors situated along the course of the spine; sometimes limited to particular points; sometimes comprehending the greater part of its extent. There are, it is true, certain instances in which such tumors have been developed some years after birth; but then they seem to have been consecutive to a pre-existing hydro-rachitic tumor. Genga's case, mentioned by Morgagni (*Epist.* 12, sect. 3.) is so clearly detailed that it is impossible to deny that it was such a case. The tumor in spina bifida is usually rounded; sometimes it presents a broad base; at others, it is more or less pyriform; or it may be lobulated, as in the case mentioned in the 68th Number of the *Edin. Journal*; it may be more or less completely oval, depending upon the character and extent of the opening in the spinal column; it may extend, as in Fiehlitz's case (*Richter, Chir. Bib.*), from the occiput to the sacrum; and in these cases we may feel two hard longitudinal undulating lines formed by the projecting points of the vertebræ. In a few cases the tumor is transparent; generally, however, it is opaque and resistant. When the tumor is very small, in some cases the integument is unchanged; but when it is of a certain bulk, we almost always find it thin, and of a violet or reddish colour at the centre. Occasionally they are wrinkled, irregularly depressed, and present the appearance of a depressed cicatrix, as shewn in Cruveilhier's plates, instead of a prominent tumor. Most frequently the tumor is seated in the loins; less frequently in the back; still less in the neck. Although many authors

deny it, it is occasionally seen at the sacrum.

When there are several tumors, we may shew their common connection by pressing on one; for we render the others tense. The tumor changes in character as we change the position of the child: if it be vertical, it is usually tense and resistant; if horizontal, it is often soft. Again, the action of respiration exercises considerable influence over it; during expiration it becomes tense; during inspiration it subsides.

Since I have been attached to the Marylebone Infirmary, I have had opportunities of examining four cases of spina bifida; and in none of these did the skin seem to contribute a covering to the tumor. Meckel, Beclard, and others, maintain that it generally does; that it is sometimes very thin and transparent; at other times thick, presenting violet or brownish mottling. That it occasionally fails I am satisfied; and then the dura mater, the arachnoid, and the pia mater, are the only coverings; and sometimes the dura mater is wanting.

In my own observations the imperfection in the vertebræ was very similar; but it may vary. Fleischmann (*Vitiis Congenitis, &c.*) pointed out three principal varieties; first, a complete division of the whole vertebra, including its body; second, absence of a portion of the lateral arch; third, a want of union in a well-developed arch. The first variety is very rare. Besides the cases described by Tulpus (*Obs. Med.*) and Malacarne (*Oggetti, &c.*) I know of no complete example. Zwinger's case (*Eph. N.C., Cent. 7, Obs. 29.*) was not so. The second variety is commonly seen; but the third is much less frequent.

The fluid contained in these tumors is like that of serous dropsies generally; hydrocephalus, for instance. The quantity of this fluid is as variable as the size of the tumor. Siebold has seen more than a pound; Vogel two pounds; Jukes (*Lond. Med. and Surg. Journal, Feb. 1822.*) seven pints. If the patient continues to live, the tumor generally continues to enlarge, and the quantity of fluid to increase. In many cases the fluid is limpid; in some it is straw colour; in some floeculent; in some darkish or sanguinolent. After puncture it may become much darker; in Henry's case it became purulent and foetid. Bostock, Marcet, and Lassaigñé, analysed this fluid, and shewed that, like that of hydrocephalus, it was more aqueous, and contained less albumen than in cases of ordinary dropsy. Bostock's analysis is as follows:—Water 97·8, muriate of soda 1, albumen 0·5, mucus 0·5, gelatine 0·2, with traces of lime. This fluid is usually continuous with the cavity of the cranium.

In these cases certain imperfections of

the spinal marrow are commonly seen; In some instances a central canal has been observed; in others it has been more or less completely bifid; but in my cases the alterations in the spinal cord were trifling.

It is not rare in these cases to find other vices of conformation—an extroverted bladder, an imperforate anus, the absence of a kidney or testicle, sometimes club-foot, and frequently hydrocephalus. In the cases I have observed the children were otherwise well conformed; all possessed the locomotive powers intact. In neither was there atrophy of the bladder, imperforation of the anus, or any defect in the lower limbs. The disease does not appear to interfere with foetal life; but, after birth, it causes death, in most cases, more or less promptly. As a general rule, the higher and larger the tumor, the more rapidly life is destroyed. When the patient continues to live, in some cases it may continue active and healthy, but usually it soon begins to languish and become emaciated. Some are paralysed from birth. There are, however, on record, many cases in which the disease has not been incompatible with the integrity of all the functions and the best health (Morgagni, Paletta, Fleischmann, Cooper, Jukes, &c.) Ordinarily the tumor gradually increases, unless, as is sometimes the case, it present a fistulous opening, from which the fluid continues to flow. Of Cruveilhier's five cases two were perforated from the moment of birth; but he conceived they bore marks of having been probably ruptured during parturition; but certainly in many cases old cicatrices are apparent, and therefore we are bound to believe that they may be ruptured in utero without destroying the life of the foetus.

In the vast majority of cases, when, after birth, the tumor has ruptured spontaneously, death in the midst of general convulsions soon follows. Terris' case is an exception.

However grave this disease may be, it is not necessarily mortal. I had a patient some months ago, a girl of 13, in whom the disease had been cured by the development of a plate of cartilaginous matter around the tumor. In Bonn's case the child lived ten years, in Warner's twenty, and in Camper's twenty-eight years. There is, or was, ten years ago, in London, a woman of nineteen, who was born with spina bifida. The tumor was ultimately large, but it was perforated, and there was a constant oozing; (the case was described by C. Hutchison.) Swagermann's patient lived to the age of fifty.

In the cases which were under my care, the tumor was fluctuating and semi-transparent; slight gradual pressure seemed to give no inconvenience; sudden pressure seemed to give pain. So long as the tu-

mor was not opened the health was very good, but no sooner were they opened than grave symptoms were developed. The time, however, was variable: in one case it was almost immediate, but in another they were not developed till the sixth day, and the fatal termination soon followed.

The symptoms announcing the approach of death are pretty constant. If there be a fistulous communication, the fluid escaping becomes changed, and more or less purulent and fetid; at the same time convulsive action comes on, consequent upon meningeal inflammation. The respiration becomes more difficult, and the child dies convulsed.

Many persons are of opinion that spina bifida is always a consequence of hydrocephalus. This is incorrect, for it has been seen in a brainless foetus (Littre). Obersteuffer says he has never observed a case of spina bifida with hydrocephalus. Ruysch's opinion, that it was always a consequence of a lesion of the spinal cord, is equally untenable; so also is the opinion that it is a consequence of the absence of the posterior portion of the vertebral rings, the cord wanting its proper support.

Treatment.—The fatal consequences of the rupture of the coverings in these tumors, whether spontaneous or accidental, and the no less fatal consequences of ordinary puncture, should be sufficient to proscrib[e] that mode of treatment in spina bifida. I do not mean by this to say that the rupture of the coverings has always proved fatal, for Maur and Hoffman, Camper, Genga, and Terris, give cases in which the patient survived it. The contradictory facts of Sir Astley Cooper, who succeeded twice, and Robert, who obtained a cure by repeated punctures with a needle, associated with compression, can only be considered as happy exceptions. In other hands, with the exception of a single case described by Otto, in which there was partial success, it has been eminently unsuccessful. Certainly the result, though it may justify it, is too little auspicious to induce a prudent practitioner to determine, without much reserve, to practise an operation which has almost always accelerated the fatal termination. The seton, proposed by Desault, and the ligature, by Forestus and B. Bell, have had equally unhappy results. I have seen good effects to follow compression methodically applied: Stueber, Sir A. Cooper, Abernethy, and others, have succeeded by this means when the tumor was not large. It facilitates absorption, and allows of the tissues covering the tumor resuming something of their former condition; increases their power of resistance; lessens the chances of rupture; and gives the vertebræ a better chance of development. The only compression which I have found

available was obtained by placing over the tumor a piece of oiled silk, and strapping it down by adhesive straps. Sir A. Cooper made a plaster cast which, in his hands, succeeded well; as the tumor lessened, portions of lint or cotton were placed in the cast. If we do not adopt either of these plans we must endeavour to protect it, because in itself it is not a mortal disease, but becomes so by rupture, and the penetration of air into an irritated serous cavity.

DISLOCATIONS OF THE SPINE.

In the absence of fracture of the vertebrae, the spinal cord may be wounded by a cutting or puncturing instrument. It is a very rare circumstance, however, to see such divisions as occur in the soft parts elsewhere; and as we usually see injuries of the spinal cord as consequences of fracture or displacement of one or more vertebrae, we shall not here treat of these wounds separately, but at once proceed to treat of dislocations.

The different pieces composing the spine are united by such extensive surfaces, and such powerful ligaments, that from the time of Hippocrates an opinion has generally prevailed, that without fracture dislocation was impossible. Indeed, when we consider the strength and number of its ligaments and muscles, the extent of articulating surfaces, and the small quantity of motion of each of its parts, when concurring in an extended general movement, we must be convinced that simple and complete dislocation—that is to say, a state in which the bodies and articular processes have at the same time abandoned their ordinary relations—must be almost impossible without fracture. These reflections apply especially to injuries of the articulations, in the dorsal and lumbar regions, because the bodies of the vertebrae in these regions are larger, and their articular processes vertically more elongated than those of the cervical region; and this is in the sense of the greatest extent of motion: we are, therefore, disposed to doubt whether the cases recorded as examples of dislocation of these bones, and characterized by a sudden and permanent angle of the dorsal or lumbar region, with or without paralysis, occurring after a fall, and from which no other bad consequence has resulted than the curvature, were cases of dislocation or fracture. For some time, however, surgeons have sought to infirm the dictum of Hippocrates, and to prove that dislocation may happen in any region of the spine: if we carefully examine those cases, we shall be nearer a safer conclusion if we assume that they were cases of fracture of the posterior laminae of the vertebrae. But if simple dislocation of the bodies

of the vertebrae be almost impossible, it is not so with the articular apophyses. Very authentic observations prove that this kind of displacement may occur in the cervical region, and is rendered more easy by the great latitude of motion necessary for the varied movements of the neck, but I know no clear case of even such a dislocation in the dorsal or lumbar region.

OCCIPITO-ATLOIDAL ARTICULATION.

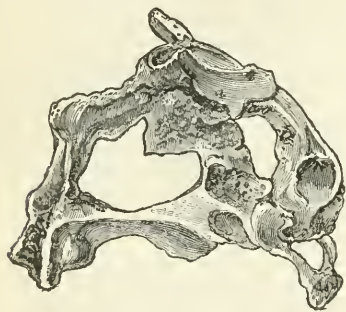
The articulation of the atlas with the occiput is rendered so solid, by ligaments, muscles, and the nature of the articulation, that it is scarcely possible that a luxation produced by violence can happen there. The only case I know of is that of Lassus. A truss of hay fell from a height of fifteen or sixteen feet upon the back of a man's neck, whose head was inclined forward. He fell down insensible, the head inclined forward and a little to the left, the mouth half open, the jaw immovable, the upper extremities convulsed: he died in five or six hours. The right vertebral artery was ruptured, and the occipital condyles were removed three or four lines from the corresponding surfaces of the atlas. In Sir Charles Bell's case there was displacement, but then there was fracture of the borders of the occipital foramen. In Cline's case the patient lived twelve months; after death, he ascertained that the atlas was fractured transversely.

ATLOIDO-AXOIDAL ARTICULATION.

The greater number of movements of the head are operated at the articulation of the atlas with the second vertebra, the head and the atlas moving around the odontoid process as a common axis; and it is at this point that displacements, consequent upon violence, most frequently occur. The most common displacement is that which results from a forced rotation of the head: in this case the articular surface of the atlas is left in front of that of the axis on one side, and in the opposite condition on the other. The face is turned towards the shoulder; and on the opposite side, at the superior and lateral portion of the neck, a projection is formed by the apophysis of the axis. The odontoid ligaments and the articular surfaces are distended or destroyed, and the odontoid process may be unrestrained. The articular surfaces may also be deranged, in consequence of the destruction of the perpendicular or transverse ligament of the odontoid process. In the first case the process may slip out of its proper place, and compress the cord and destroy life; and this as much easier in children, that the process is shorter, and the perpendicular ligament longer and less resistant. Thus, if a child

be supported by the head, one hand supporting the chin, the other the occiput, and he struggle much, this dislocation may happen, and death follow, as in Petit's case. This dislocation of the odontoid process, without rupture of the transverse ligament, may happen in the adult under a violent muscular effort, the face inclining downward, as in Sir Charles Bell's case, where the odontoid process pierced the cord and destroyed life instantaneously.

Of all the cases of this kind of injury on record, the most extraordinary is that which I communicated to the Medico-Chirurgical Society. A man fell from a hay-rick, pitched on the back of the neck, was stunned, got up soon, was bled and purged: all the inconvenience which resulted to him during the eleven months he lived, was an inability to rotate the head. After death the following appearance was presented:—



The atlas had been fractured through the ring, leaving the articulation with the occiput intact. That portion, by the violence of the injury, was driven down between the pharynx and the axis, and carrying with it the odontoid process; when it arrived on the same plane with the axis, it became attached to it by perfect bony union. The lateral displacement of the atlas upon the axis is not necessarily mortal. Many cases show, that even successful reduction is possible: but it is probable that, in these cases, the odontoid ligaments were not destroyed. Where, however, the dislocation is accompanied by a displacement or fracture of the odontoid process, all authorities agree in believing that the accident is immediately mortal. My case, however, is a happy exception to that law. The sudden death in these cases is caused by the compression of the cord. The accident has occurred by falling on the head from a height; from a violent blow on the back of the neck; a fall on the chin; a sudden and violent shock on the head; an exaggerated rotation of the head. Some

circumstances would lead to the idea that it may happen by hanging. Louis ascertained that in those cases where the executioner drags the legs violently downwards, or jumps upon the back, it generally happens.

Treatment.—The majority of surgeons have advised that no attempts at reduction should be practised, because, say they, the deformity is better than the risk of sudden death, which attends all efforts to reduce the displacement. Still, as many cases have yielded to those attempts, we have no right to proscribe them. In a child whose head had been rotated until the chin rested over the right shoulder, Desault informed the mother of the dangers which attended the attempts to reduce the displacement: those dangers she was content to incur. He proceeded to fix the shoulders firmly, gradually raised the head, and restored it to its proper position: the pain ceased, and the child moved his head naturally. Ehrlich (*Chirurg. Beobacht*) mentions the following as a case of dislocation of the atlas upon the axis, successfully treated: A lad of sixteen fell from a ladder under a bag of flour—his head violently pushed forward by the load. He was insensible; the surface pale, the eyes fixed, tongue hanging out, respiration slow and intermittent, pulse scarcely perceptible, limbs motionless, involuntary evacuation of *fæces* and urine; the head very moveable, and resting on the right shoulder, but when placed upright fell indifferently on either shoulder: the articular apophysis of the axis projected on the left side. Ehrlich pursued the same plan with Desault; and, after many attempts, it was reduced with a snap, and gradually all the bad symptoms disappeared. I think, therefore, that such attempts are justifiable; but not without apprising the patient, or his friends, of the risk which is run.

REMARKS
ON THE
PATHOLOGY OF ACUTE HYDRO-
CEPHALUS*.

BY WILLIAM LUMSDEN, M.D.

[For the Medical Gazette.]

UNTIL the appearance, in 1768, of Whytt's "*Observations on Dropsy of the Brain*," acute hydrocephalus was either confounded with apoplexy, or de-

* Read before the Parisian Medical Society, 15th June, 1840.

scribed as fever with determination to the brain. Its resemblance to acute dropsical diseases was the principal feature which attracted Dr. Whytt's attention, and he accordingly ascribed the symptoms to effusion arising from laxity of the exhalants, or from a watery state of the blood. This opinion was generally received, until Quin, in 1779, drawing his reasons from pathological anatomy, shewed a closer alliance to inflammation; and in this he was supported by the concurrent testimony of Rush and Withering, and by the later researches of Garnett, Gölis, Martinet and Parent-Duchatelet, Lallemand, Abercrombie, and others. The idea of dropsy was now almost driven from the field, and the inflammatory nature of the disease all but universally admitted, diversity of opinion existing only as to the seat of the inflammatory action; some maintaining that the arachnoid of the ventricles and base of the brain were the parts most generally, if not always affected, and others insisting on the central portion of the cerebral substance itself being considered as the seat of morbid action. Of late the French pathologists have introduced a new element into the discussion: the labours of Guersent, Gherard, Rufz, Piet, Bequerel, &c. demonstrating the almost universal existence of granulations of a tubercular nature on the under surface of the cerebral layer of the arachnoid coat, have led to the hydrocephalic symptoms being attributed to the irritation produced by these as foreign bodies, and have proved the influence of the strumous diathesis on the production of this fatal disease.

In the few remarks about to follow on the nature of hydrocephalus, all reference to symptomatology has been purposely avoided, under the belief that pathological anatomy is the true basis upon which we ought to raise our theories of disease, and that symptoms ought never to be appealed to for more than slight collateral evidence, except in those cases where, from our ignorance of the physiology and ultimate structure of organs, the scalpel is powerless.

After thus slightly glancing at the literary history of acute hydrocephalus, the three doctrines as to its nature present themselves to our notice; and, proceeding chronologically, the first question to be taken into consideration is, "Is acute hydrocephalus a dropsy of

the brain?" In other words, "is it a disease having for its essential character an effusion of serum into the cavity of the arachnoid, the cells of the pia mater, the ventricles, or between the fibres of the cerebral substance itself?" This, the oldest opinion held by pathologists, has, since the labours of Quin and others already mentioned, been almost entirely driven from the field, yielding step by step to the growing influence of the inflammatory theory; and noticing it at all but in a cursory manner would have been an unwarrantable waste of time, did not the recent experiments of Magendie and Guillot, on the state of the ventricles during life, and the hygrometric properties of the brain, modify the appeal to post-mortem appearances.

The opinions of the older pathologists were founded chiefly on the observation of symptoms, supported by occasional autopsies; imperfect, of course, in the infancy of pathological anatomy. The progress of the disease, the gradual extinction of the senses and intelligence, and the comatose state accompanying and characterizing the later stages, led them to the conclusion that compression of the brain existed; and they were confirmed in this opinion by occasionally finding effusion in the ventricles, while the idea of inflammation seemed inconsistent with the frequently slow and insidious nature of the attack, and with the absence of quick, irritated pulse, heat of skin, and other febrile symptoms. As pathological anatomy became an object of greater attention, numerous cases were found in which the effusion was either entirely wanting, or too much in quantity to account for the symptoms; and the numerical method of our days proves that effusion is even less frequent than is generally supposed. In one series of twenty-seven cases observed by Bequerel, eighteen did not present the slightest trace of an anormal quantity of fluid; and in another of ten cases, effusion existed only four times. But it will be found immediately that this evidence is insufficient, and that the mere absence of effusion at the examination of the body by no means leads to the conclusion that none existed during life.

Magendie was the first who observed and insisted upon the hygrometric properties of the cerebral substance. He shewed that, in order to find the cerebro-spinal ventricular fluid, the animals

upon which he made his experiments must be examined immediately after death, otherwise absorption took place, the fluid disappearing among the fibres of the nervous tissue. Guillot has carried out these observations, and arrived at some curious and important results. Numerous experiments on animals have proved to him—

1st, That in the normal state, and during life, the cerebral ventricles are filled, and even distended, by serosity.

2d, That the quantity of this fluid diminishes in proportion to the length of time after death at which these cavities are examined.

3d, That the fluid which has thus disappeared is to be found in the cerebral substance.

4th, That the brain is endowed with hygrometric properties to such an extent, that a piece taken from the cerebrum of a dog immediately on being killed, and plunged into water or serum, possesses the power of absorbing its own weight of these fluids; and,

5th, That differences exist in different animals, and in the same animal, according to the age, and the shorter or longer period of time allowed to elapse between death and the dissection.

The importance of these observations will be easily understood. They bring a new element into the field of discussion, and diminish, if not destroy, the weight of the arguments founded on the existence or non-existence of effusion after death.

It very rarely happens that an autopsy is made sooner than twelve hours after death, and by far the greater number take place at a still later period. From this it follows that, in those cases in which effusion is found after death, unless it is in such quantity as to distend abnormally the ventricles, we are not bound to conclude that there existed during life morbid effusion. Why may not a change have taken place in the physical properties of the nervous tissue? Why may not its hygrometric power have been diminished, thus leaving the normal quantity of serum in the cavities unabsorbed? There is certainly nothing against this supposition, as it is not unfrequently the case that we find a firmer state of the brain than natural accompanying the existence of serous fluid in the ventricles. On the other hand, in those cases in which no effusion is found, the conclusion is not by

any means necessary that no abnormally large quantity of serum existed during life. An opposite change to that just alluded to may have taken place in the minute structure of the cerebral mass, endowing it with increased absorbing power, by which the fluid present before death may have been removed from our sight. Neither is this supposition improbable, as we frequently find the brain soft, and as if infiltrated, the septum lucidum and other central parts fragile and disorganised,—a change most commonly ascribed to inflammation, but certainly on insufficient and feeble grounds, as it is frequently observed in cases in which no symptoms of lesion of the nervous centres existed during life. Maceration and infiltration are far more probable causes.

It is evident, then, that in our post-mortem examinations the quantity of fluid in the brain cannot be estimated by merely measuring what we find in the ventricles, or in the cells of the sub-arachnoid cellular tissue. That existing in the cerebral substance itself must be also taken into account. When we find, therefore, effusion in the ventricles, accompanied by a soft infiltrated state of the brain, as in a case mentioned by Gölis, in which this viscus, considerably increased in size, yielded upon pressure a large quantity of fluid, which oozed out as if from a sponge, all doubt is at an end, and the evidence of the existence of dropsical effusion is irrefragable. But in acute hydrocephalus this is a lesion seldom to be met with, and where it occurs must be considered as merely accidental. An opposite state is much more frequent. In the eighteen cases reported by Bequerel, in which no effusion existed, it is distinctly stated that the brain presented a healthy appearance, was of good consistence, and that the septum lucidum and the walls of the ventricles were not in the slightest degree altered. Thus, even with the modifications which the researches of Magendie and Guillot have introduced into the question, the conclusion is evident that hydrocephalus is not essentially an acute dropsy of the brain.

The theory which comes next in order is that in which the protean power, inflammation, is made to play the chief part. It is a matter of great importance in a therapeutical point of view, more particularly because it has been the prevailing opinion all over Europe for the

last fifty years. Before, however, commencing the inquiry into the truth of this doctrine, a most indispensable consideration presents itself to our notice. As pathological anatomy is the foundation upon which these remarks have been raised, it is of the utmost importance to have a clear understanding about the signs which we are warranted in admitting as evidence of the existence of inflammation. On this subject there exists among professional men great looseness, it can scarcely be called diversity, of opinion, as few have a distinct idea of what they mean when making use of the term inflammation. This evidence may be derived from two sources — symptomatology and pathological anatomy. The former has, for reasons already stated, been excluded from this paper, and may be dismissed here with the simple remark, that the literary history of hydrocephalus shews distinctly the weakness of evidence drawn from this source. It is not to be supposed that the Whytts, Cullens, and Pinels, those laborious observers and faithful delineators of disease, could have introduced such terms into their nosological system as “apoplexia hydrocephalica,” and “febris cerebialis,” if the evidence of inflammatory action had been convincing. Turning, then, to pathological anatomy, and inquiring what is the evidence furnished by it for the existence of inflammation, it will be found that the only undeniable signs are, active capillary congestion and modification of nutrition, such as softening, induration, secretion of pus, lymph, and the like. These are witnesses whose testimony cannot be called in question. It now remains to be seen whether they speak in favour of the theory of hydrocephalus at present under consideration. In authors an almost perfect unanimity exists on one point — that the appearances are not constant. One says they are generally met with; another that they are frequently seen; and a third that they are often to be found — all agreeing that they are sometimes absent, and that the hydrocephalic symptoms may exist without them.

In the first form of the disease, according to Copland, and it is certainly by far the most frequent one, the appearances on dissection are described to be the following:—Venous congestion in the membranes, inflammatory ap-

pearances in the longitudinal sinus, (it is not, however, stated what these are, and great reliance cannot be placed upon post mortem inspections in which such vague phrases occur as “marks of inflammation,” “inflammatory appearances,” and the like,) an effusion of limpid serum, varying in quantity from two to six or eight ounces; the substance of the brain soft and blanched, especially towards the centre, the fornix and septum lucidum being more or less disorganized, and soft like curd; slight watery infiltration of the cerebral substance, and a few other lesions less constant and of less moment. It must strike every one that these appearances cannot be received as marks of inflammation; the congestion is venous, not arterial, the effused serum is limpid, and can scarcely be admitted to be the product of inflammation, particularly as Baillie and Marcet have both shown that it is coagulated neither by acids nor heat, and the analysis of the latter proves that the quantity of albumen is very small. The state of the central parts is easily and more satisfactorily accounted for by the observation of Gaillot, mentioned above, than by calling in the assistance of inflammation.

Parent Duchatelet, and Martinet, have represented the disease in question as an arachnitis of the base of the brain and ventricles; but although occasionally occurring, this is by no means constant. Within the last two months I have seen seven autopsies of acute hydrocephalus, and in only one of them was there any mark of arachnitis; there was a deposition of lymph on the surface of the pons varolii, and opposite the base of the third ventricle. That true inflammation occurs, and that not unfrequently, I do not intend to deny; I have seen pus infiltrated in the cells of the pia mater, adhesion of the two layers of the arachnoid, sero-purulent effusion in the ventricles, and dotted extravasation of blood in the substance of the brain, but without being induced to regard them in any other light than complications. Hydrocephalic symptoms terminate frequently in death, without leaving a trace behind which can be referred to inflammation: the conclusion, therefore, cannot be avoided, that acute hydrocephalus is not essentially an inflammatory disease.

The most recent doctrine on the subject is that which has arisen within the

last fifteen or twenty years, from the careful and laborious researches of the French pathologists. According to it, hydrocephalus is a scrofulous affection, and depends immediately upon a deposition of tubercular granulations in the pia mater.

The eminent writers who, in the latter half of last century, first insisted upon the inflammatory nature of the affection, and called the attention of the profession to the fact, that effusion within the cranium is neither constant nor necessary to the production of the symptoms, have, with few exceptions, allowed the influence of an hereditary taint. Gölis, in his animated and, if I may be allowed the expression, picturesque history of hydrocephalus, quotes, on this subject, Quin, Odier, Cheyne, Peter Frank, Portenschlag the elder, and other labourers in the same field who had preceded him, and bears ample testimony to the truth of their observations. Its frequent occurrence in children of precocious intellect has often been observed, and we know that precocity of intellect is not an unfrequent attendant on the strumous diathesis. Sauvages observes, in speaking of eclampsia from hydrocephalus, "*Elle attaque les enfans surtout lorsqu'ils ont un vice scrofuleux dans le sang, et le mesentère rempli de glandes squirrhenses.*" Coindet remarks, "*les scrophules sont une des causes predisposantes;*" and Cheyne holds that scrofula and hydrocephalus are frequently convertible into each other. The coincidence between the periods of life subject to these diseases has been adduced as an illustration, at least, if not a proof, of their intimate connexion. Hydrocephalus attacks all ages, but all are not equally exposed to it. Rare in early infancy before dentition, it rages with its greatest violence during the period of childhood, and disappears after puberty, to be met with afterwards only in an exceptional manner.

Guersent, in a table of eighty cases from the age of six weeks to sixty-eight years, shows that the period of greatest frequency is between the third and fourteenth years, and Piet finds, in a series of ninety observations, in which the youngest is eleven months and the oldest fifteen years, that the sixth, seventh, and eighth years present the greatest proportion of cases, the numbers at each of these ages being four-

teen. But leaving reasoning from analogy and collateral evidence, it will be found that direct testimony is not wanting in favour of this view of the subject.

Laennec is quoted as the first who drew the attention of the profession to the frequent occurrence of small greyish granulations on the surface of the cerebral hemispheres in cases of acute hydrocephalus. The existence of these granulations was denied altogether by some, and by others stated to occur only rarely. I find them in the article Hydrocephalus, of the *Cyclopædia of Practical Medicine*, mentioned as things "of casual occurrence;" and Copland merely remarks, "tubercular formations have been found in various situations within the cranium." Gölis says distinctly he never saw them, but adds, with the greatest and most praiseworthy candour, that he never gave himself much trouble in looking for them. About eight or ten years ago the subject was taken up by Guersent, Gherard, Ruz, and Piet, and to them we are indebted for a most minute and accurate description of the morbid appearances found in acute hydrocephalus, called by them "*Meningite Tuberculeuse.*" Their observations have been confirmed by Lediberder, Valleix, Green, and Bequerel, the two former having extended their researches into the period of manhood. There results, from the labours of these diligent observers, a weight of evidence in favour of the scrofulous nature of the disease, extremely difficult to be got rid of. We have no longer mere analogy for our guide. We have direct, and it might almost be said, demonstrative facts, were not demonstration unfortunately a thing scarcely known in medicine. Piet, in his thesis of 1836, gives the details of twenty-three cases, of which eleven were actually phthisical, and four had tubercles in other parts of the body. In another series of eighty-seven cases mentioned by him, sixty-three presented tubercles in various organs. Guersent has only seen one case in which no tubercles at all could be found; in all the others either the lungs or bronchial glands were affected with tubercular deposit. Of one series of twenty cases mentioned by Bequerel one only presented neither granulations nor tubercles; in the remaining nineteen the pia mater was studded with granulations, and the lungs were phthisical.

Another series of ten cases furnished similar results. During the last three months I have observed attentively seven examples, in all of which granulations were found in the cerebral membranes, in two instances co-existing with regularly formed tubercles, both in the centre and periphery of the brain, and, in all, with tubercles in the lungs and other viscera; the liver, spleen, and intestines, being most frequently affected. Some doubts have been cast upon the tuberculous nature of these granulations; Senn, Charpentier, and Cruveilhier, considering them as false membranes, and Berton holding their identity with the glands of Pacchioni in a state of enlargement. The last opinion being absurd, to use the mildest term, it is the most easily set aside. A simple inspection of the seat of the granulations is sufficient to prove it erroneous. In place of occurring in the greatest quantity on the upper surface of the hemispheres, which would be the case if the glands of Pacchioni were the seat of the lesion, their most frequent seat is in the fissures of Sylvius, and along the sides and base of the brain.

With regard to the other opinion, direct demonstration is wanting to prove it false, from the difficulty of examining either chemically or anatomically such small bodies. Pelouze, it is true, has analysed the granulations, and has found them to be identical in composition with crude tubercles; and I have examined them, with great care, under the microscope, and compared them with tuberculous matter from all parts of the body, without being able to detect the slightest difference of structure. But, after all, little weight is to be laid upon either the chemical or microscopical examination, since the composition of those textures of the human body, whether normal or abnormal, which are rich in albumen, is pretty nearly the same, the difference between them depending chiefly upon their physical organization—a difference which, in the present state of science, it is always difficult and often impossible to appreciate, and because, under the microscope, substances not manifestly organised present very much the same appearance when viewed by transmitted light. Evidence from this source, then, only derives importance from its connexion with that of an indirect nature, which will now be briefly gone over. These granulations

are never met with, except in scrofulous subjects, in whom regularly formed tubercles exist in other organs, and they are often found in the pia mater, mixed with and evidently passing into tubercles, presenting the cheesy structure. I saw, just the other day, a case of this kind, in which granulations, about the size of a pin's head, and tubercles of all sizes under that of a pea, were intermixed promiscuously together, and evidently passing into each other; they are clearly analogous to the grey granulations of Bayle, the tubercular nature of which is now beyond all doubt. Besides, were they formed of coagulable lymph, we should expect to find them only in organs in a state of inflammation; but this is far from being the case, as they are met with in scrofulous subjects along with tubercles in almost every organ of the body, and totally unconnected with any marks indicating inflammatory action. They are most common under the pleura and peritoneum, and I have met with them in the liver, spleen, and kidneys. Thus, then, if circumstantial evidence is to be admitted at all, it is impossible to avoid concluding that the granulations in question are merely small tubercles.

On glancing back over this short examination of the modern French doctrine, it will be found that the constant occurrence of the signs of scrofula with hydrocephalus has been completely proved; but that the disease depends essentially upon the irritation caused by the presence of granulations in the pia mater cannot be admitted, as these bodies are sometimes entirely absent, and when present their number bears no proportion to the severity of the symptoms.*

Notwithstanding the cursory and imperfect view which has been taken of the pathological lesions in acute hydrocephalus, the conclusion is evident that they are very varied in their number and nature. They may, for greater clearness, be arranged into four groups, sufficiently distinct from each other to admit of separation.

1st, Those cases in which no lesion whatever can be detected.

2d, Those in which there is only

* I recollect one case which went through all the stages of hydrocephalus to a fatal termination, and presented on inspection no other lesion than three small granulations on the upper surface of the cerebellum.

slightly increased vascularity, and increase in the quantity of cerebral fluid.

3d, Those in which evident traces of inflammation are discovered, such as sero-purulent effusion, coagulable lymph, pus, and hæmorrhage.

4th, Those in which tubercular granulations are formed on the under surface of the visceral arachnoid.

The three last may be variously combined with each other; a certain degree of effusion frequently existing along with the granulations, and their presence sometimes giving rise to inflammatory action.

On considering these facts, we cannot help exclaiming, how is it possible that one effect can proceed from such a variety of causes so different in their nature? How are we to explain the existence of a train of symptoms, which are pretty regular in their course, by the presence of organic lesions so dissimilar? There must be something more in hydrocephalus than effusion, inflammation, or tubercular deposit; but the difficulty is, to know where this something is to be looked for. Are we to search for it in the other organs? Are we to find this cause in functional derangement of the brain, from diseases existing in a distant part, as affections of the liver, irritation from worms, and the like? Certainly not. These, when they do exist, are merely concomitant, depending upon the general diathesis, and produced immediately, in the great majority of cases, by the deposition of tubercular matter, causing ulceration of the mucous membrane of the intestines, obstruction of the mesenteric glands, or chronic inflammation of the peritoneum. Acute hydrocephalus is essentially a derangement of the nervous influence; we must therefore look for its immediate cause in the nervous system itself. But, unfortunately, in the present state of science, our endeavours will be futile. Until we know more about the ultimate structure of the brain and spinal cord, in their normal state, we cannot hope to acquire any knowledge of the changes which occur in these structures from disease. But it is to be hoped that the ardour which has been shewn of late in the study of minute anatomy, and of the phenomena of the formation of living structures, will lead to a more careful study of minute pathology, by which the causes of morbid action will be investigated, and not merely the results of that action de-

scribed. Then, and not till then, may we look for a solution of many of those difficulties which are at present stumbling-blocks in the way of the healing art, and for some insight into the nature of a class of diseases to which it may possibly be afterwards shewn that hydrocephalus is nearly allied—diseases looked upon as the opprobria of medicine—chorea, hysteria, and epilepsy, bidding defiance to the pathologist; and tetanus, and hydrophobia, resisting the utmost efforts of therapeutics.

I shall now conclude, by again remarking that we must not look for the cause of acute hydrocephalus in the many and dissimilar lesions described by pathological anatomists, but in some peculiar change in the ultimate structure of the brain, possibly analogous to what we may suppose to exist in the neuroses, depending upon a scrofulous constitution, and frequently, but not necessarily, complicated with dropsical effusion and inflammation.

CASE OF ASCITES.

To the Editor of the Medical Gazette.

SIR,

I INCLOSE you the particulars of the case of ascites, the fluid of which I described in a former number of your journal, and from the chemical constitution of it some physiological deductions were drawn.—I am, sir,

Your obedient servant,

PHILIP B. AYRES, M.R.C.S.

Thame, August 17th, 1840.

M. L., æt. 46, a strong-built woman, accustomed to hard field labour, rather emaciated, with a pinched countenance, applied to me in February last, complaining of enlargement of the abdomen, which had gradually increased for several months, following suppression of the menstrual flux. I examined her, and found a considerable quantity of fluid in the abdominal cavity; so much, indeed, as to preclude all attempts to ascertain the state of the liver, and other abdominal viscera, on disease of some one of which the ascites evidently depended. Her pulse was small and rather accelerated, skin harsh, urine scanty, high coloured, and depositing a pinkish sediment, and her cheeks striated with minute red vessels which so fre-

quently indicates abdominal organic disease, particularly that of the liver.

As the fluid continued to increase, notwithstanding the use of diuretics and purgatives, I advised her to be tapped, partly with a view of obtaining a more satisfactory examination of the abdominal viscera, and also thinking that by removing the collection of fluid I might prevent its return by appropriate treatment. I should mention that, prior to the operation, she complained of little or no pain, and what little existed was referred to the back, neither was there much tenderness, as the manual examination did not seem to annoy her. After the paracentesis the fluid did not re-collect, but the abdomen was shrunk, hard, and air gurgled through the colon when pressure was made on the abdomen. Neither could I detect any enlargement of the liver. The pulse was generally from 90 to 100, small and weak; the appetite remained pretty good; but she suffered from frequent vomiting; at first of greenish mucus, and afterwards of the food itself. The bowels were generally relaxed, and the motions rather deficient in bile. She gradually became more and more emaciated; œdema of the right ankle, and, towards the termination of the case, of the left also, made its appearance; and, a few days before her death, the skin and conjunctiva became yellow. She died on the 10th of June.

Post-mortem Examination twenty-four hours after death.—The body extremely emaciated, so that, on cutting through the integuments, every trace of adipose tissue has disappeared. *Thorax*:—The lungs perfectly sound; no trace of tubercles; but cellular bands, of ancient date, connected the pleura pulmonalis with its costal prolongation. The heart very small and flabby, with extremely thin walls. Those of the left ventricle scarcely a quarter of an inch in thickness. *Abdomen*:—The whole of the abdominal viscera glued together by fibrinous exudation (coagulable lymph), in the midst of which the omentum was imbedded, so that they were separated with the greatest difficulty. The liver, somewhat larger than natural, was mottled, presenting the appearance usually called gin-liver. In the gall-bladder, 45 calculi, averaging the size of a common nut-kernel, were found, consisting of cholesterine and biliary matter.

The kidneys presented a healthy appearance, except that they were slightly flabby. Spleen natural.

REFLECTIONS.—It is sufficiently evident that this was a case of ascites dependent on disease of the liver, although we must, at the same time, admit some degree of inflammatory action in the peritoneum. It is manifest, from the history of the case, that she could not have suffered from acute peritonitis, since there was little tenderness or pain in the abdomen from the commencement of the disease; indeed, the symptoms (save the abdominal enlargement) were so slight that she did not apply for medical advice until the size of the abdomen, and the debility dependent on the progress of the disease, precluded laborious occupation. It is well known that chronic peritonitis is so insidious in its approach and progress, as in some instances scarcely to be observed, save from the constitutional symptoms and some abdominal disorder, which, together, yield a very doubtful diagnosis: but here we have sufficient disease of the liver to give rise to the effusion. It will be found on reference to my detail on the chemico-physical properties of the fluid, that it contained fibrine in solution, which coagulated in a few minutes after it was removed from the body. This shews that the abdominal cavity was free from adhesions until after the fluid was removed, for had adhesions existed the abdomen could not have been emptied of the fluid which was most easily and completely effected. Now, as the fibrine was in solution in the fluid, and as the fluid had been gradually collecting for several months, some unknown cause must have preserved it in solution, until its relations with the vital energies were disturbed by the evacuation of a portion of it; and in this particular it differs from common acute or chronic peritonitis, in which coagulation of the coagulable lymph takes place in a very short time after the effusion, so that fibrous bands, &c., are found in cases which have lasted only a few days or weeks. The symptoms after the operation did not indicate an attack of acute peritonitis, so that in all probability the fibrine was deposited from what fluid remained in the abdomen after the operation, or some small quantity secreted immediately after, which, by gluing the viscera together, and to the reflected peritoneum, obliterated the cavity, and

prevented further effusion, as in the radical cure of hydrocele. At all events, the post-mortem examination goes to establish the deductions I drew from the chemical constitution of the liquid, in my former paper.

OPERATION FOR STRABISMUS.

THE BLUNT HOOK.

To the Editor of the Medical Gazette.

SIR,

THAT you may render a service to the profession, and a relief to the sufferings of many afflicted with obliquity of vision, I beg an early insertion of an improved blunt hook, which I have recently employed in many cases with perfect success.

The shape and size of the instrument, (which was made by Mr. Weiss,) are accurately indicated by the annexed figure.



Being formed with a view to its turning freely in a small deep space, its object is to pass beneath the rectus muscle at its narrowest part, in such a manner as to inclose all the fibres of the latter at once, and bring the muscle perfectly into view, without causing it to be violently stretched, or the globe pulled from its socket—a process which causes intense pain to the patient when a straight or slightly curved director is used to separate the muscle from the sclerotic.

Its advantages to the surgeon are, that he can readily secure the whole muscle, and separate it to any extent he pleases, without using more force than necessary to separate the cellular tissue between the muscle and the globe; also, should any fibres remain undivided, he can, in consequence of the free motion which the peculiar curve of the hook allows, readily

find them: it likewise enables him to make an even division of the fibres of the muscle, which (without the use of the director or hook) cannot be done.

To the patient the advantages of this

hook over the common director are inestimable, as it saves all the pain caused by the stretching of the nerves, and of the parts which attach the eye to the orbit.

Its advantage over the scissors (when used without a director or hook) is, that it allows of an even division of the muscle close to its insertion, for in many cases, where the muscle is *not* cleanly and closely divided to its insertion, the irregular fibres swell, become inflamed, and granulate, so as to require several applications of caustic or sulphate of copper during two or three weeks after operation. In no case where I have employed the hook, and divided the muscle evenly, and close to its insertion, has the application of any caustic been required.—I am, sir,

Your most obedient servant,

JAMES A. ADAMS.

27, New Broad Street, City,
August 3d.*

P.S. My friend Mr. Mackmurdo has requested me to say that he has found very considerable advantage in the use of the above-mentioned instrument.

INSTRUMENT FOR TREATMENT OF MYOPIA.

To the Editor of the Medical Gazette.

SIR,

IN reliance upon your well-known desire to promote the interests of the profession, in receiving all communications offering advantage to the public, I beg leave to present to you, for an early insertion in your valuable journal, an account of a new method of curing shortsightedness.

I am, sir,

Your obedient servant.

AUG. FRANZ, M.D.

19, Golden Square, August 18, 1840.

In reading the *Allgemeine Zeitung* of May the 7th, I first became acquainted with a new method of treating myopia by means of an apparatus invented by Dr. Berthold, professor at the University of Göttingen. To receive more explicit information on a subject of so much importance as this discovery appeared to me, I placed myself in direct correspondence with Professor

* By some mistake this paper did not reach us till the 23d.—ED. GAZ.

Berthold, and to his kindness I am indebted for the means of laying this report before the profession, as he not only sent me several communications by letter, but also the paper read by him before the Royal Society of Sciences at Göttingen, accompanied with a drawing of the apparatus. On the leading points I give short extracts from his paper and from his letters.

"In any attempt to cure myopia," says Professor Berthold, "our attention must first be directed to the *mutationes oculi internæ*, or the faculty inherent in the eye, of accommodating itself to the various distance of objects from the eye. Of the existence of this faculty in the eye there can be no doubt, but in what this power of adjustment consists is a question upon which a great diversity of opinion yet prevails. At all events it is subject to the will. According to the calculations of Olbers, the proportion of this power of adjustment in the human eye is such, that if the distance of the crystalline lens from the retina could be altered to one line, we should be enabled to see objects with equal distinctness, from a distance of four inches to the utmost extent of human vision. The same effect would result from a displacement of the lens to a distance of one-half of a line only, provided the radius of the cornea could be altered to about two-fifths of a line.

"The chief indication in the cure of myopia is to accommodate the above-mentioned vital power of adjustment to the physical power of refraction in the transparent parts of the eye; and to the attainment of this end, generally speaking, no obstacle exists. To regulate this power of adjustment so as to effect a permanent cure, or at least a diminution of myopia, we must proceed upon the principle, that, like every other voluntary motion of the body, it can be increased by continued and proper exercise, and by, at the same time, carefully obviating whatever might interfere with the advantages gained by it. With a view to attain this object, an apparatus, called the *myopodiorthoticon**, has been invented, which serves for the purposes of reading and writing; these being the means best adapted for the cure of myopia as intended by this instrument.

"This apparatus consists of a desk to be placed upon a table. The desk is articulated anteriorly with a board or pedestal of equal size by means of hinges, with a view of regulating and adjusting it to a proper position, in which it may be retained by a support. From the posterior part of the desk two screws rise vertically, one at either side. These screws pass through a cross-bar, which may be moved upwards or downwards by means of a mother-screw situated below it, and retained in this position by a second mother-screw situated above it. Through the centre of the cross-bar a graduated rest passes, in a horizontal direction, for the support of the head, which rest, being moveable, is held in position by a screw. By the motion of the desk upon its pedestal the cross-bar on the lateral screw, and the rest in the cross-bar, the apparatus may be so regulated, that a book to be read may be brought in the position best adapted to the situation of the eyes, and the power of sight. Parallel to one of the lateral screws of the desk a scale passes upwards through the cross-bar. This scale is graduated like the above-mentioned rest, that the gradual diminution of the nearsightedness may be accurately ascertained, but more especially that the apparatus may be adjusted to the difference in the print of the books read."

The rules to be observed in the employment of this instrument are, according to Professor B., chiefly these:—

"1. The apparatus must be so regulated that the person using it can read large print with ease, whilst leaning with the upper part of the root of the nose against the free extremity of the rest, previously brought in such a position as to place the eyes as accurately as possible opposite the centre of the book upon the desk. Care must be taken, at the same time, that the one-half of the book containing a smaller number of leaves have its deficiency compensated by suitable support, so that both halves may always form a horizontal plane.

"2. In moving the cross-bar upwards, by turning the mother-screws on the lateral screws, the distance from the free extremity of the rest to the book, or the distance of distinct vision, is to be increased every second, third, or fourth day, according to the scale, about one-half or a whole line, but never to a

* Derived from *μυωψ*, a near-sighted person, and *διορθωτικόν*, something apt or fitted to improve.

point where the print can no longer be read with facility, and where, therefore, reading would become an exertion to the eyes. A rapid increase of distance must be especially avoided, as the power of adjustment in the eye increases but slowly, and would not be able to follow; and, moreover, too great an exertion of this power can even become hurtful to the organ.

“3. For reading with the apparatus, a book must be chosen of a clear and large print, and, if possible, with the same-sized type throughout, not interspersed with italics, &c. The same print must be read as long as possible; a work containing a large number of volumes is, therefore, preferable. Should a change of book, or of the type, become necessary, the distance of the rest from the book must be regulated again to that point where the print can be read with ease, and the increase of distance gradually conducted in the manner above mentioned. For writing, the distance of the rest from the paper placed upon the desk may be somewhat more ample than for reading, if the patient observes that general rule for myopic persons, viz., to write a large hand.”

4. “During the progress of the treatment, all occupations requiring close or irregular approximation of the eyes to the object, such as sewing, knitting, embroidering, drawing, &c., must be avoided. At times, when the patient is not using the apparatus, he should practise looking at distant objects only, take frequent exercise in the open air, and view distant trees, green fields, and hills. A proper diet should be observed, and all heating food and liquors abstained from; a cooling aperient is to be taken now and then, and habitual congestion of the head or eyes suitably counteracted.”

Professor Berthold states in one of his letters to me, that in Göttingen, as well as in several other parts of Germany, this instrument is already much in use for the treatment of myopia, and that its effect has surpassed his expectation, even in the most severe cases. Of the numerous cases under his treatment he relates one of a student, who was very anxious to be cured of his myopia, or to have his sight at least improved. This young man, aged 26, enjoyed very good sight from his birth, but during his education at school this had gradually di-

minished until a confirmed myopia established itself. When the patient placed himself under the Professor's care the degree of nearsightedness was such, that he could only read a common print at a distance of four inches: he suffered at the same time from a congested state of the vessels in the conjunctiva and eyelids, the margins of which were rather swollen, and easily reddened by the stimulus of light and air. A few leeches were applied in the neighbourhood of the eyes, and occasionally repeated. Sulphur. cremor tartari, and pulvis rhei, ordered to be taken internally, so as to ensure two or three loose motions daily, and a strict diet recommended. After the continuation of this treatment for a short time the myopodiorthoticon was brought into use: by its use the distance of vision became gradually increased in the manner above described, so that the patient now, after the lapse of scarcely four months, can read with facility and distinctness, at a distance of eleven inches and one-third, a print which formerly he could only read at four inches distance. He also sees distant objects in the open air far better than before. The use of the apparatus is still continued, and he is not content with the distance of eleven inches and one-third, but purposes extending his sight to sixteen or eighteen inches. When the patient commenced the use of the apparatus he had made rapid progress in increasing the distance of vision, by which he had certainly gained great practice in the power of adjustment of the eyes, but this organ having been over-exerted became easily fatigued, so that it was considered necessary to begin the use of the instrument again from the commencement. Prof. B. lays it down as a rule never to be deviated from, that a slow and steady progressive increasing of the distance of vision, especially in the beginning of the treatment, is the chief condition upon which a safe and perfect removal of myopia by this apparatus depends. He farther remarks, that in early life a more rapid cure may be expected than in mature age; and that the time of duration of the treatment with the apparatus is exactly proportioned to the degree of myopia.

I have been informed by several of my friends in Germany, that the Royal Society of Sciences of Göttingen has highly commended the ingenious construction of the myopodiorthoticon, and

expressed their approbation of this new method of treating nearsightedness; and that much attention and interest have been excited, not only at Göttingen, but also in several other towns of Germany, by this invention. If we attentively consider the principles upon which the construction of this instrument rests, we shall find that they are theoretically perfectly correct, and therefore, in my opinion, its practical worth can hardly be doubted, the less as its inventor has already succeeded in curing a number of cases of myopia. There appears even every reason to believe that a judicious use of this instrument will prove effective not only in myopia, but also in cases where presbyopia exists in young persons, or where one eye is near and the other farsighted—an ophthalmic defect which is not very rare.

As this instrument is very simple in its construction, any writing-desk used in colleges, offices, &c. may be easily furnished with its more essential parts, and thus students, clerks, &c. afflicted with nearsightedness, which in these persons is always brought on by their daily occupation of reading and writing, may make the cause of their affection the means of cure. Proper attention must of course be paid to the medical and general rules laid down for this method of treating myopia. This instrument may, farther, be a means of preventing myopia, when used at an early period of life, especially by those children in whose eyes an hereditary predisposition for myopia may exist, which generally shows itself after the commencement of instruction. For this purpose the apparatus might be introduced into schools and other public institutions for education on a large scale, viz. by converting a whole school-table into a common myopodiorthoticon, which is regulated according to the distance of vision of each individual, chiefly by means of a somewhat different rest for the support of the head. The introduction into public institutions of the myopodiorthoticon thus contrived would moreover prove advantageous in several other respects, inasmuch as the use of this apparatus would oblige the children to sit in an upright position, and to hold their heads erect, and thus prevent curvatures of the spine, complaints of the chest, congestions of the head, and other diseases, which are apt to appear in children of a weakly constitution, after

an habitually improper position of the upper part of the body during reading and writing.

I have now a myopodiorthoticon in my possession, which I had made according to Professor Berthold's drawing, with the exception only, that instead of one graduated scale, I ordered two to be made, one at each side of the desk, in order to be enabled to regulate the cross-bar with greater precision. The pedestal I have also altered, and it is now so contrived that, while the whole instrument remains upon the table, the desk may be raised to a height suitable for a person whilst sitting or standing. With this instrument I have written and read myself during the last four weeks, merely to ascertain whether its use is attended with inconvenience or restraint; but I find that, on the contrary, when once habituated to it, much comfort and support are derived from its employment.

As perhaps mine is the only instrument of this description in this country, I shall feel great pleasure in affording to those who may be interested in this method of treating nearsightedness, the opportunity of examining the mechanical contrivance upon which this method is based.

ANALYSES AND NOTICES OF BOOKS.

“L'Auteur se tue à allonger ce que le lecteur se tue à abrégé.”—D'ALEMBERT.

Acute Hydrocephalus; or, Water in the Head an Inflammatory Disease, and curable equally and by the same means with other Diseases of Inflammation. By DAVID D. DAVIS, M.D., &c. London, 1840. 8vo. pp. 309.

It has long been the established opinion that the effusion of water in acute hydrocephalus is the consequence of inflammation of the brain. After narrating some cases of the disease, Dr. Abercrombie says—“From a fair and candid review of the whole subject, I think we can have but little hesitation in concluding, that this is the ordinary form of the disease which is commonly called acute hydrocephalus; that it is originally an inflammatory affection, chiefly seated in the substance of the central parts of the brain; that it gene-

rally terminates by ramollissement of these parts, combined with serous effusion in the ventricles, &c.*

Dr. John Clarke, in his *Commentaries on the Diseases of Children*, treats of hydrocephalus under the head of phrenitis, or inflammation of the brain, and recommends bleeding from the external jugular vein in children above a year old.

Underwood says, "Whatever may be supposed the immediate cause of hydrocephalus, practitioners seem chiefly to have depended on repeated bleedings, purges with jalap or calomel, blisters to the neck or head, diuretic medicines, and the external use of mercurial ointment. A large bleeding early in the disease I have thought very beneficial, especially in children of a robust habit*."

Yet in spite of the opinions of such eminent physicians, the majority of practitioners do not bleed largely in hydrocephalus; whether from a natural distrust of their own diagnosis, or from the fear of the remedy proving as fatal as the disease. Dr. Davis, indeed, doubts whether even the theory is generally received. He says, "A notion of this kind somewhat doubtfully exists among some members of the profession. But the impression in question does not amount to a living practical faith in this country; if, indeed, we may venture to presume that it even approximates to a general opinion." (p. 165.) Our author accordingly shows from dissections (chiefly those in Gölis's work), that hydrocephalus is an inflammatory disease; he gives the diagnosis of its several stages, and discusses its treatment at length. The account of the first stage extends to eleven pages; but we do not see in it any symptoms so eminently characteristic as to enable the practitioner to adopt without hesitation the extremely vigorous treatment recommended by our author. A couple of diagnostic signs, if they could be found, would be more satisfactory than this long discussion.

In the treatment, the most important point, says Dr. Davis, is bleeding; which is to be carried to "full fainting." It is not a state of faintness that is wanted: it is full and decided fainting." (p. 241.) In children from a

month to a year old, the quantity of blood taken should be from three to five ounces. When the blood cannot be obtained from the arm, cupping is to be adopted in preference to leeching; or the jugular vein is to be opened.

When the child has recovered from the fainting, an emetic is to be administered. An infant six months old is to take a quarter or a fifth of a grain of tartar emetic, with five grains of ipecacuanha. The parents are not to have any confidence "in certain alarming and otherwise uncalled for observations of druggists' apprentices, and other young gentlemen occupied in shops of pharmacy, about the magnitude of doses of medicines intended for young children."

The third indication is to diminish the morbid heat of the head by cold applications. The best is some iced fluid in one of Mackintosh's water-cushions; and the fluid must be changed every half-hour, as long as it is agreeable to the child. Blisters, if applied before blood has been abstracted, often aggravate the symptoms. Calomel is useful; and Dr. Davis commonly recommends a purge consisting of two or three grains of calomel (or sometimes twice that quantity), with six, eight, or twelve grains of jalap, according to the age of the patient, after the operation of the emetic is over. Calomel may also be exhibited to resolve the inflammatory action; but this must be done with discretion, as in full and frequent doses it has sometimes destroyed the patient. It has occasionally, though rarely, cured acute hydrocephalus, without bleeding. Dr. Davis never depends upon it, but uses it only as an auxiliary to the lancet, or in cases where bleeding would be too late.

We next come to an alarmist manifesto, which does not please us; it is entitled "Circumstances indicative of danger of acute hydrocephalus, which should operate as a warning to parents and guardians to take the advice of their medical friends in good time." It is divided into thirteen paragraphs, containing occasions for alarm; and these sections are so sweepingly comprehensive, that half the children in the kingdom would be thought in danger of hydrocephalus by their anxious parents.

The work concludes with the details of six cases of acute hydrocephalus

* Abercrombie on Diseases of the Brain, 2nd Edition, 1829, p. 143.

† On the Diseases of Children, 8th edit. p. 349.

treated by our author at University College Hospital. The treatment, which was successful in every instance, consisted of the vigorous measures already mentioned; but the water-pillow was used only once. He has been equally fortunate in private practice under similar circumstances; that is, when he has seen the patient soon enough. Whether this active treatment will be generally attended with the success which Dr. Davis supposes, must, of course, be left to time to determine. His work is replete with valuable information; as, independently of his own experience, it contains an abstract of the best treatises which have appeared in English on acute hydrocephalus.

Cursory Notes on the Morbid Eye. By ROBERT HULL, Extra-licentiate of the Royal College of Physicians, &c, London and Norwich, 1840. 8vo. pp. xx. and 249.

THIS work is divided into ten chapters, which respectively touch on the diseases of the conjunctiva; the sclerotic; the iris; the choroid; the retina; the cornea; the membrane of the aqueous humour; the corpus ciliare; the vitreous humour; and the optic nerve. It is a useful and curious book; useful in substance, and very singular in style. Dr. Hull, who is now physician to the Norfolk and Norwich Hospital, was formerly surgeon to the Ophthalmic Dispensary in the same town; and these notes deliver the result of his own experience, as well as his commentaries on the practice of others.

The style is often humorous, and sometimes witty; and though it is certain that quaint phrases and sportive sallies are alien to the genius of a scientific work, candour obliges us to confess that we have been amused by these agreeable eccentricities.

Dr. Hull has found the oil of turpentine useful in strumous ophthalmia, and inflammation of the cornea, as well as in iritis.

Apropos to rheumatic iritis, he mentions that he has used the artichoke with success, both in the hot and cold forms of ordinary rheumatism. The dose is a drachm of a tincture three times a day, with ten grains of an extractum cyuaræ. In treating of *hemipia*, or half-sight, Dr. Hull observes that this

is of two kinds; the one, where a man sees things with half an eye; the other, when only one-half of a given object can be seen. "Dr. Wollaston was an illustration of both sorts of hemipia. As a philosopher, he saw things with half an eye; as a patient, with cerebral disorganization, he was the victim of this singular disorder in each organ of sight." (p. 216.)

Those who purpose to study diseases of the eye with the deep attention which they deserve, will do well to read Dr. Hull's ingenious work; for, independently of containing many instructive cases, it supplies the reader with materials for thinking.

MEDICAL GAZETTE.

Friday, August 28, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."
CICERO.

MANAGEMENT OF THE POOR IN SCOTLAND.

IF an Englishman, discontented with the mode of relieving the poor in his native island, were to turn his eyes to the continent, in the hope of finding some abler system of management, the kingdom of Holland would be among the first to attract his attention. If the Dutch erred, he would be pretty sure that it could not be on the side of incautious liberality. Their excessive sobriety and prudence have been proverbial for ages; and it might be supposed that they would be the last to forgive any pecuniary indiscretion. "When a man happens to break in Holland, they say of him, that *he has not kept true accounts*. This phrase, perhaps, among us, would appear a soft or humorous way of speaking, but, with that exact nation, it bears the highest reproach*." It might have been conjectured, therefore, that so rigorous a nation would have been as indisposed to

* Spectator, No. 174

pardon a pauper-labourer as a bankrupt merchant; and that, in the true spirit of Malthus, they would have expected the ploughman to make a provision for old age out of his scanty earnings. But how stands the fact?

Mr. Nicholls, in his Report to Lord John Russell, "on the condition of the labouring classes, and the provision for the poor, in Holland," speaks of the scrupulous economy and cautious foresight of the people in terms as strong as those employed by Steele in the quotation we have just given. "To spend their full annual income is accounted a species of crime." Nevertheless, "the institutions for the relief of indigence are numerous in Holland, and consist of *hospices* for the aged and infirm, orphan-houses, workhouses of towns, *dépôts de mendicité*, or district workhouses, the poor colonies, and private charitable institutions. * * * Many of these institutions, in their structure and appearance, rather resemble palaces than poor-houses, and they form one of the most prominent characteristics of the great towns."

To this Dr. Alison adds, what Mr. Nicholls has omitted to observe, that there is in Holland an extensive system of out-door relief, authorized and enforced by law. The fund for the relief of the poor is derived partly from endowments and voluntary contributions, as well as from the direct tax; but Dr. Alison justly observes that the effects of a fixed and uniform provision depend on the certainty with which it can be expected, and "not on the source from which it comes, which is very often unknown to the receiver." The sum expended on the poor in these establishments is 4s. 4d. a head on the whole population of Holland: this is nearly four times the amount of the Poor's Fund in Scotland, while the value of money is higher in the former. "And what is the consequence of all this?" asks

some Englishman slightly tinged with Malthusianism, but not yet in a hopeless state of mental delusion. "I suppose the Dutch must have lost all their antique virtues, and have become a huge mob of paupers: each labourer struggling to obtain the largest share from the national broth-pot, until every man has devoured every one else, like the Kilkenny cats in the story!"

Let Mr. Nicholls answer the question. "Nothing can exceed the cleanliness, the personal propriety, and the apparent comfort of the people of Holland." He saw only two beggars, and not a single ragged, dirty, or drunken person. These facts, and plenty more like them, given in Dr. Alison's former pamphlet, have convinced many of those who were led astray by the sophisms of the economists, and did not know the facts of the case. It appears from the clearest evidence, that in those countries where there is only a scanty provision for the poor, such as France, Italy, and Spain, the indigent are far more miserable, and absolute destitution is far more common, than in the North of Europe, where relief by law is administered.

Dr. De Vitré, writing to Dr. Alison, scouts, as he well might do, the visionary idea that charity is paralysed by the Poor Laws in England. The man who first put forth this fancy must have had a marked preference for solving problems on paper, to looking at facts in the scene before his eyes. In no country is private charity so munificent as in England; and the Poor Laws, far from drying up the fountain, have merely been one of the channels through which it flows. Indeed, the Poor Laws, by raising the standard of comfort due to the indigent, have given private charity a higher mark to aim at. The obvious truth is, that the Poor Law, and, what is of more importance, its liberal interpretation for ages, were not forced by a benevolent despot upon a reluctant people, but

were the natural offspring of English feelings; and to suppose that the same people who disgusted our scribbling Harpagoes by the comforts lavished on the workhouses, steeled their hearts against misery in all other shapes, is an absurdity that could only have proceeded from the skull of an economist.

It is curious that Dr. Alison's antagonist, Mr. Monypenny, admits, in its fullest extent, the existence of very great and appalling distress in Edinburgh and Glasgow; and allows that the arguments by which Dr. Alison has enforced the necessity of a cure for this serious evil are powerful and resistless. But while he admits the flagrantcy of the evil, he denies the expediency of the remedy proposed by Dr. Alison, and, instead of an additional assessment, recommends another voluntary subscription. But, unfortunately, the unanswerable reply is, that a subscription of this kind does not flourish in Edinburgh. Last winter the destitution of the poor was a pretty general subject of discussion there; only £600, however, could be raised in several weeks; and as additional funds could not be procured, the relief abruptly stopped, "when so far from the destitution being adequately relieved, many very destitute families had not even heard of the subscription*."

The scantiness of the collection is certainly surprising; or, at least, would be so, if we did not recollect that poor-rates and subscriptions come from the same purses, ruled by the same wills; and as we have above observed that large poor-rates do not dry up the sources of charity, so small ones do not render them more copious. We are to recollect, too, that not the poor of Edinburgh alone, but those of Glasgow, Paisley, Greenock, Perth, Dundee, and Aberdeen, are in the same precarious condition; liable to the sweeping attacks

of unrelieved distress, with starvation and fever in its train. The smaller towns are nearly on the same footing; and 200,000 of the population of the Highlands and Islands are even worse off. Dr. Alison comes to the painful, but, we fear, too accurate conclusion, that "*the lowest class of society, in more than one-half of the population of Scotland, during at least a part of the year, is in a state of lamentable destitution, for which there is no adequate provision.*"

With this general destitution, and the example of the failure at Edinburgh before us, it would be vain to hope for voluntary subscriptions. A writer in the Ayr Observer prefers the voluntary to the compulsory system, but says, oddly enough, "The excellence of the Scottish system is generally acknowledged. But in what does this excellence consist? Simply in giving a penny-farthing a day instead of sixpence." It seems that in certain districts this frugal allowance is the *το καλον*, or charity in its ideal beauty. "Most of the managers of the poor in landward parishes, with whom the penny-farthing a day is the maximum, are so tied down to the imagined excellence of giving this miserable pittance, that *they never feel any compunctions on refusal, however painful may be the distress*.*"

The assessment, too, must be universal, and the law of settlement must be altered, or the poor will continue to flock into Edinburgh as they do now.

The most plausible argument urged by Mr. Monypenny is, that in the Parliamentary proceedings of 1834, the Scotch system was held up as a model of imitation. The plain fact was, that in the talk of the more vehement economists, the Scottish system was called better than the English, simply because

* Alison, Reply, p. 20.

* Alison, Reply, p. 22, from Ayr Observer, May 5, 1840.

it gave less relief. Its details were not known; for if the terrible facts brought to light by Dr. Alison had been then published in England, the most icy prater about surplus population would have been ashamed to praise the five farthings a-day system.

Moreover, since 1834, several official reports have been published on the condition of the poor in Ireland; and the details of unutterable misery endured by the unrelieved poor of that country have done much to wean all reasonable persons from Malthusian whims. The Poor-Law Commissioners, too, have been chastised into a greater semblance of decency: so that Mr. Monypenny is clearly wrong when he supposes that the public estimation of the Scottish system has undergone no change in England since 1834.

We do not altogether agree with Dr. Alison in his approbation of the workhouse system as now carried on in England. It is clear that harshness too often gives the tone to their internal administration; and it must demand the nicest tact on the part of the master, to steer his course, guided by the rigorous injunctions of the Commissioners on the one hand, and any remains of humanity which may linger in his breast on the other. To be kind to the wretched inmates of the house would be to disobey the rule that workhouses are to be eminently distasteful—in short, “tests of destitution;” and if he carries the spirit of the regulations into execution too actively, he is liable to be hauled over the coals by their authors; to be disowned, in fact, like the imprudent emissary of a crafty minister. Hence such scenes as those which have taken place in the Bath Union Workhouse. The Rev. C. Fowell Watts, late chaplain to the establishment, informs us that a woman who had been made to pick oakum in a cold out-house till disease was produced, and who had given evi-

dence in the course of the investigation by the Assistant Commissioner, said to him: “Oh, sir, I am determined, as long as I stay in the house, never to tell any thing again, so great has been the persecution and ill usage I have received since I gave evidence.” Among other instances of oppression, Mr. Watts gives the case of a child, four years old, looking the picture of wretchedness and sickness, who was taken out of the house by its mother, after its back had been covered with wheals and bruises as the punishment for wetting its bed. In another case, a child, eight or nine years old, was flogged most cruelly, three days running, for complaining to the guardians of having been beaten unjustly. The bread has several times been shewn Mr. Watts at the time of receiving it, not half the proper size. In a word, the poor, generally speaking, are “very unhappy in the house*.”

The reader cannot suppose that the instances of ill-usage in workhouses, which from time to time force their way into the newspapers, are the only cases that occur. Would that they were! Those under whose sanction, or by whose instigation, the severities are exercised, are “respectable” persons; they keep gigs, nay, tandems and barchouches; they hang together; and even those whose approbation of union matters is gradually waxing cold, do not like to denounce their comrades. The poor themselves have scarcely any access to the press. Is anybody so simple as to imagine that of the atrocities committed at our public schools, under the name of fagging, one tithe has ever come to light? No! it is enough that the practice is winked at, if not sanctioned, by the masters; cruelty remains uncensured within the iron limits of the white slave-gang; and it must be some extraordinary fact indeed, which

* Times, Tuesday, Aug. 25, 1840.

is enabled to burst its unhallowed ceremonies, and affright the uninitiated public!

Again we part from Dr. Alison with the deepest admiration and esteem; and we fully join with him in the observation which he quotes from Dr. Johnson, that "a fixed and decent provision for the poor is the true test of civilization."

CANCERUM ORIS.

To the Editor of the Medical Gazette.

SIR,

As the following case of "cancerum oris," in which it was deemed expedient to institute a medico legal inquiry, must necessarily be interesting to your numerous readers, I have taken the liberty to send it for insertion in your valuable journal. The Morning Advertiser, of Thursday, Aug. 20, contained the most correct account of the proceedings. I have, therefore, transcribed them from that journal, and have added some further remarks which were accidentally omitted.

I am, sir,

Your most obedient servant,
EDWARD AUGUSTUS CORY, M.D.

Canon Street Road, Aug. 21st, 1840.

Extraordinary Investigation: Medical Practice.—Yesterday evening an important inquiry took place, before Mr. Baker, touching the death of a child, four years of age, the daughter of Mr. Clark, a carpenter, and dealer in coals and vegetables, residing in the New Road, who, it was alleged, came by her death in consequence of mercury having been improperly administered to her by a medical gentleman named Cory. The affair excited considerable interest in the neighbourhood, owing to the very high professional reputation of Dr. Cory, and the inquest-room was crowded to excess. There were not less than twelve of the leading practitioners of the district present, amongst whom were Mr. Adams and Mr. Curling, two of the surgeons and lecturers at the London Hospital; Messrs. Tripe, Major, Garrett (parochial surgeon), Gurney, and others. Several gentlemen from St. Thomas's and Guy's Hospitals also attended. The jury, having been sworn, proceeded to view the body, which presented a most horrible spectacle. It was very much emaciated, and one side of the face was completely eaten away.—Mary Ann Clark, the mother of the child, stated that the deceased was taken ill about seven weeks ago. Previous

to that time the child had had good health. The complaint was whooping-cough, accompanied by spitting of blood; and she called on Dr. Cory, of Cannon Street Road, who saw her until the following Monday, in all five days. On the fourth day after his attendance the child complained of soreness of the mouth, and her teeth were very loose, and came out. The next thing she noticed was the child's tongue and the inner part of her cheek. Both were much swollen and risen in white blisters, so much so that her side and double teeth became imbedded in the side of the cheek.

Dr. Cory, when she first consulted him, recommended her to send the child into the country for the benefit of the fresh air, as the best method of getting rid of the whooping-cough; but she would not agree to this, as she was dissatisfied with Dr. Cory's carelessness about the case, and sent for Mr. Rutherford, a surgeon, of Ratcliff Highway, who, when he saw the child, stated that the patient ought not to be removed into the country, and that he thought it ridiculous for any medical man to advise such a thing. Mr. Rutherford advised that the child should be kept warm; but Dr. Cory had ordered her to give it all the fresh air she could, although she told him when she did so that the child always fainted away. [The child was kept closely confined in a little back apartment, in immediate approximation with coals and vegetable matter in a state of decomposition.—E.A.C.] "Mr. Rutherford declined to interfere in the case, when he found that Dr. Cory had attended the child. The child got gradually worse, and she took it to Mr. Curling, who operated on the cheek. On the following day she again took the child to Mr. Curling at the London Hospital, but he gave no hopes of recovery, as mortification had commenced.

A medical gentleman on the spot attended the deceased after this until her death, which took place on Monday morning. She called several times on Dr. Cory as she came from the hospital, but never could see him. She left word for him to call at her house, but, instead of doing so, he sent the following note:—

"Dr. Cory sends his respects to Mrs. Clark and begs to decline attending the child, and recommends Mrs. Clark to those (if she can find them) who will do more for its benefit, and pay more attention. Mrs. Clark will be so good as to remember that in the first instance Dr. Cory told her that medicine would not do the child much good, and the only chance of its recovery would be in the removal of it into the country for a time. If Mrs. Clark had thought proper to comply with this recommendation the child would have had a

very good chance of getting well. The idea of the child having had mercury is too ridiculous to be noticed, and Dr. Cory is surprised that a person of Mrs. Clark's apparent good sense should entertain for a moment such an absurd opinion. Dr. Cory has the honour to attend nearly all the most respectable inhabitants of the neighbourhood, and he is too much occupied and too independent to put up with any nonsense from any of his patients.

"Cannon Street Road, August 10, 1840."

The coroner having read the letter aloud put some questions to the witness, who said that Dr. Cory had told her that the complaint of the child was hooping-cough. He also gave it (the malignant disease) another name which she could not recollect.—Dr. Cory—I told you the deceased was affected with cancerum oris, which means canker of the mouth; did I not? Mrs. Clark—Yes, that was the term. Mrs. Clark continued—There were no symptoms beyond hooping-cough and spitting of blood until the child had been four days under Dr. Cory's treatment, when small blisters showed themselves in the mouth, and the teeth became loosened. [The whole evidence of the woman was of the most rambling and exaggerated description. There were not the slightest symptoms of any affection of the mouth the last time I saw the child, which was five days after I first prescribed for it. It was stated that an illegal practitioner in the neighbourhood had insinuated to the mother that the child had been improperly mercurialized.—E. A. C.] Coroner—Who wished an inquest to be held on the deceased? Witness—Both my husband and myself, sir, as we were dissatisfied with Dr. Cory's treatment of the child. [The beadle was perfectly aware that the first proposition of an inquiry emanated from me. This was mentioned at the time, but has not been noticed by the reporter.—E. A. C.] Cross examined by Dr. Cory.—You did not say in my hearing that medicine would not do my child any good. All that I know is, that you gave orders to your assistant not to supply me with medicine unless I paid for it. Dr. Cory said he was willing to allow his book, in which was written every thing he had prescribed for the child, to be examined by the medical gentlemen present, who would find that he had not sanctioned the administration of a single grain of mercury; indeed, he should hardly have advised the removal of the child into the country, if he had thought it necessary to put it under the influence of mercury. Dr. Cory here read an extract from Professor Cooper's Surgical Dictionary, descriptive of the disease, termed cancerum oris, with which

disease the child was affected. The symptoms of this disease exactly corresponded with those described by the mother of the child. The disease was one that seldom or ever affected adults. Several of the medical gentlemen present stated that they had examined Dr. Cory's book, containing the prescriptions administered to the child, and could not find that any mercury had been given. They considered the treatment quite proper.

Mr. Blizzard Curling, nephew of the late Sir W. Blizzard, Surgeon to the London Hospital, deposed that the child was brought to him a fortnight ago. There was a large spot of mortification on the left cheek. The disease was of such a decided character that he told the mother and her friends it could not recover. He gave it a ticket for the hospital, and prescribed the usual remedies. He asked if the child had been taking mercury, and was shown a powder, which he did not test, but advised that it should not be given to the deceased. The disease was a very singular one, and in the incipient stages white livid spots would arise, the teeth become loose, and other symptoms exhibit themselves, which will often arise when not one grain of mercury has been administered. Cleanliness and fresh air were very essential in curing the disease called cancerum oris. Persons afflicted with it would stand very little chance of recovering in such a confined and densely populated neighbourhood as St. George's in the East.—A juror asked Mr. Curling why he advised the friends of the deceased to discontinue the powders? Mr. Curling said his only motive was that he was not then aware of what the powders might be composed. A juror—Is the disease contagious? Mr. Curling said it was difficult to say, but he was inclined to think it was: it principally affected children between the ages of eighteen months and seven years. [Mr. Tripe, a most respectable practitioner of twenty-two years standing, had had two cases of cancerum oris lately in his own practice. He had not given them any calomel, or other preparation of mercury. Mr. Major had also had a similar case.] Mr. Garrett, the parish surgeon of St. George's in the East, said he was decidedly of opinion that the disorder in question was a kind of epidemic, principally confined to densely populated districts, where the ventilation was defective. If all the metropolitan thoroughfares inhabited by the lower classes of the community had a free current of air through them, the health of the people would be greatly improved. Thousands of the poor, especially in the East end of London, never got a mouthful of pure atmospheric air for months together;

indeed, a gleam of sunshine was quite a treat to them. The coroner said there could be no doubt that the mortality of the metropolis was greatly increased by the lack of fresh air. Mrs. Clark said her child had not suffered from any want of cleanliness; and should never be convinced that it was not killed by mercury. The coroner said that the feelings of the mother under the circumstances were very natural, but it was quite evident she was in error. The jury and the medical gentlemen present had had an opportunity of examining Dr. Cory's book, from which it had appeared that not a single grain of mercury had been administered to the deceased; still, he would repeat that the conduct of the mother was very natural, though she was evidently labouring under a gross mistake relative to Dr. Cory's treatment of the child. A juror—I consider the case one of great importance to the public generally. We are all occasionally in the hands of medical men, and it is necessary a strict watch should be kept upon them, in order to prevent improper medicines from being administered, from which the most lamentable consequences have but too often ensued; but in the present instance no blame appears to be attributed to the surgeon. The coroner, in summing up the evidence, remarked that in a case like the present an inquiry was of the utmost importance, not only for the satisfaction of the friends of the deceased, but also in justice to the medical attendant, who might do all in his power to conquer a disease without success. Dr. Cory was a gentleman in great practice, and he had never heard any complaint of his treatment. It appeared from the testimony of the numerous medical men present that the treatment of the child was perfectly correct; and it is probable that had his advice been taken, and the child sent into the country for the benefit of the fresh air, it would have been alive at that moment: the benefit of a pure atmosphere in such cases was incalculable. The late Sir William Blizard, the principal surgeon of the London Hospital, some years ago, discovered that the cure of surgical patients was from some cause greatly retarded.

After speculating upon the cause for some time, he found out that the common sewer flowed close to the walls of the hospital, and he conjectured that the effluvia arising therefrom affected the health of the patients. He therefore got the sewer walled over, and a vast difference was soon perceptible among the patients. He mentioned this to shew the jury the effects of an impure and close atmosphere in such cases.

"The jury expressed themselves perfectly satisfied, and returned a verdict of "Natural

death from cancerum oris, and that death was in no way accelerated by the medical treatment of the child."

MILITARY HOSPITAL, EDINBURGH.

Case of Comminuted Compound Fracture of os frontis, extending to os ethmoides, os sphenoides, os nasi, and nasal plate of superior maxillary bone on the left side, accompanied by continual loss of cerebral substance, in which the patient lived twelve days, retaining his senses with very little exception till his death.

JULY STR.—Private —, 29th regiment, ætat. 29, a stout, robust man, 9½ years service, of which 5½ years were in the Mauritius, was assisting in pulling a rope upon the fore-castle this morning, when the rope, which passed through a large block, gave way, and the block flew upwards and struck him on the forehead. He was seen at five minutes past six, when the following was his state. An enormous swelling of the integuments covering the os frontis, with three lacerated wounds upon it, from the centre of which about a teaspoonful of cerebral substance, broken down, was protruding. On examination, a probe passed into the cavity of the head; no depression existed, nor did the constitutional symptoms indicate any such. The pulse was 86, and full. The pupil of the right eye contracted; that of the left could not be seen, from the swelling. Pulse fell to 70 on bleeding. He is quite sensible, and complains much.

R Pulv. Jalap., gr. xxx.; Calomel, gr. viiss.; Aquæ, ʒiiss. M. V.S. ad. ʒxvi.; Appl. Lintæum Vulneri.

Quarter to 7 A.M.—Has just vomited some cocoa he had taken last night, and afterwards some blood, from the exertion of vomiting; portions of brain are protruding from all the wounds. He is becoming drowsy, but when aroused is very fretful and irritable. Half-past 8. He took the draught; the portions of brain were gently wiped away. 9 o'clock. More brain has presented itself at each of the wounds. He has slept for a quarter of an hour; his respiration was slow and gentle; he is now awake, and very irritable, attempting to tear off the lint; pulse 76, and soft; is perfectly sensible. Half-past 12. Remains in the same state: bowels not moved.

R Pulv. Jalap. gr. xx; Ol. Croton, mʒj. M. Passed the catheter, and drew off ʒiv. of urine.

3 P.M.—No change; is very irritable when aroused; soft brain and blood oozing from

the wounds; bowels unmoved. 7 P.M. Bowels confined; pulse 80, and full; pulse fell to 70; brain exuding from the wound: has taken a few teaspoonsful of tea.

V.S. ad. $\frac{3}{4}$ x. R. Ol. Croton, $\frac{mij}{j}$; Ol. Ricini, $\frac{3jss}{j}$. M.

July 9th, 8 A.M.—Has slept tolerably during the night. About 10 P.M. he passed his urine freely; there has been no motion of the bowels; talks at times incoherently, but is not in such a state of stupor as yesterday; pulse 76; tongue brown; the wounds are filled with cerebral matter and blood. Medicine operated three times.

R. Ol. Croton, $\frac{gtt}{ij}$; Ol. Ricini, $\frac{3jss}{j}$.

9 A.M. was removed from H.M.S. Vesuvius to Edinburgh Castle.

10th, 8 A.M.—Has had a good night; bowels open once, passed his urine twice; head somewhat easier, and wounds not so foul as yesterday; cerebral matter, however, still exuding from them.

Appl. Lotio Frigid. Capiti.

11th.—Complains much of pain in his head. The wounds have the same appearance. The swelling of the integuments having diminished, a crepitus has been discovered over the left external angle of the os frontis, by staff-surgeon Dr. Robertson; has taken tea and bread; pulse 74; bowels open twice since he has been on shore.

12th.—Has had a good night: a probe passed through a small opening in the central wound, two inches inwards into the cavity of the head. There is still cerebral matter, mixed with bloody serous discharge; is quite sensible; bowels confined; pulse 74; tongue cleaner; appetite tolerable.

R. Ol. Ricini, $\frac{3i}{j}$.

13th.—No change.

14th.—Complains much of want of sleep; has been incoherent last night; tongue foul; bowels open twice by the oil; pulse 76, and small; very distinct crepitus on left side of frontal bone.

R. Morph. Acet., gr. 1-3; Acid. Acet., $\frac{gtt}{iv}$; Aq. distill., $\frac{3i}{j}$. M. hor. som.

15th.—Has slept well; crepitus and fluctuation, or rather an undulating sensation as though no resistance was offered by bone, very distinct over the left eye; tongue foul; pulse 74; bowels confined.

Ol. Ricini, $\frac{3ss}{j}$; Rep. Haustus, hor. som. Hab. Mixt. Diaphoret. ter in die.

16th.—Rather feverish; pulse 80, and hard; much discharge from wound; is not altogether so well.

Cont. Omni.

17th.—Pulse 76; tongue foul; opened a collection of matter in left eyelid.

18th.—Has been incoherent all the night. The orderly reports, a portion of brain came away this morning the size of a hazel-nut; pulse 90, and hard; is quite sensible; pupil of right eye much contracted; is in a profuse perspiration; brain and blood exuding from the opening.

19th, half-past 3 A.M.—Died.

Sectio Cadaveris, before Dr. Myham, 29th regiment, staff-surgeon Dr. Robertson, and Sir George Ballingall, thirty-two hours after death.—*External appearance:* Body muscular, and well formed; ecchymosis of depending parts of body; a deep semi-circular depression, three inches long, extending from highest part of forehead straight down to the left orbit: this was not visible during life, owing to the extensive swelling. On removing the scalp, the whole of the left side of frontal bone was found smashed; one irregular piece of bone, three inches long, was isolated, as well as several smaller pieces; the fracture extended to the orbital plates of the frontal and sphenoid bones, the os planum of the æthmoid bone, and also the os nasi and nasal plate of superior maxillary bone, and the crista galli was loose. The anterior lobe of the brain, corresponding to the wound, was completely disorganized and infiltrated with pus. The pericranium was in a high state of ecchymosis; but, singularly, the dura mater, as well as the rest of the brain not immediately implicated in the injury, was in a normal condition, which accounts for the absence of constitutional symptoms in this melancholy case.

It is due to state that when on board H.M.S. Vesuvius, every possible kind attention conducive to the comfort of the patient was afforded by Lieut. Blount, commanding, to whom, as well as to Dr. Incedon, surgeon, R.N., of that ship, for his kindness and co-operation, I beg to offer my sincerest thanks.

GEORGE ALEX. COWPER,

M.D., M.R.C.S.L., Assist.-Surg. 29th reg.

Edinburgh Castle,
Aug. 10th, 1840.

NEW OPERATION FOR THE CURE OF PROLAPSUS RECTI.

By M. ROBERT.

THE surgical operations now performed for prolapsus recti are ineffective when the disease has arrived at its worst form. Incision, excision, and cauterization, affect only the mucous membrane, and make it adhere to the sphincter, which, after the cicatrization, remains as relaxed as before.

These considerations induced M. Robert to shorten the muscle in proportion to the degree of its relaxation, and made him hope that the cut extremities of the muscle would form, by their union, a narrow ring, and thus prevent the prolapsus of the mucous membrane. This operation was performed with success in June 1839, on a washer-woman, aged 33, in St. John's ward, at La Pitié. The woman, when pregnant for the third time, had a prolapsus recti which was but temporary, and only occasioned a supportable degree of discomfort. Her fourth pregnancy brought on a prolapsus of the uterus, a permanent and very considerable prolapsus of the rectum, and a relaxation of the parietes of the abdomen. M. Roux now excised a prominent portion of the mucous membrane of the rectum. This somewhat relieved her; but the prolapsus soon increased; the fæces came away involuntarily, and she had pains in the loins, and the upper part of the thighs. This combination of symptoms confined the patient to her bed, and in June 1839 she was admitted into the Pitié. At that time the sphincter was so relaxed that four fingers could be easily introduced. The patient having been prepared by a progressive diminution of diet, and the use of opium, so as to produce as long a constipation as possible, M. Robert proceeded to operate in the following manner:—He made an incision on each side of the anus, beginning several millimetres from the middle of the aperture, and directed backwards to the point of the coccyx. The flap of skin between the two incisions was removed, together with the portion of the sphincter which it covered; and half the length of the muscle was thus removed. The two sides of the wound were united by three stitches of the twisted suture.

On the sixth day after the operation the ligature came away, and union was almost complete. Nevertheless, there remained a fistulous passage from the anus to the coccyx.

On the fifteenth day no stool had been passed; and, therefore, on the following morning, the want being felt, the fæces were removed with the curette, to prevent the straining of defecation, which must have been injurious.

On the forty-first day, the patient, who previously to the operation had not been able to retain her stools, kept a clyster for a whole day. There was no longer any prolapsus, and the aperture was of the normal diameter; only, when a finger was introduced, it was not pressed with all the force of the sphincter in its natural condition. In the course of the month of August the patient walked, and passed her stools voluntarily; but a small *bourette* of the mucous membrane had already pro-

truded, and though, twice touched with the actual cautery, was not destroyed.

The cure has been a lasting one, in spite of the protrusion of the mucous membrane.

MM. Gerdy and Bérard were appointed to draw up a report on his paper.—(*Gazette Médicale* of June 20th, in its report of the sitting of the Academy of Medicine on June 16th.)

HOW TO KEEP COOL IN INDIA.

JUNE 9th.—The thermometer at 112 all day in our tents, notwithstanding tatties, [blinds], phernanticlotes, and every possible invention that was likely to lessen the stifling heat. Runjeet Sing sent us word that he could not stand the heat any longer, and was going off at once to Lahore, which he did, taking his whole camp and about five thousand troops with him; he marched upwards of fifty miles that night.

The thermometer after ten o'clock A.M. at 113. All sorts of experiments to keep themselves cool are tried by the different unhappy individuals in camp; I think mine the most successful. Dig a large hole in the ground, in the centre of your tent, and then place your table over it to form a sort of inner roof, and prevent the sun from shining down upon you. Make your cheestie water the whole floor of the hut, and then hang a wet sheet over the hole, like a hammock; pegged to the ground on the edges of the pit, to prevent its touching the bottom; take off all your clothes, and get into it, and by having a skin of water thrown over you every ten minutes, you may perhaps get the thermometer down to 100, which would be a perfect heaven to what we are now enduring. * * * *

JUNE 17th.—Hard at work all day endeavouring to make ourselves cool and comfortable in our new quarters—a work of considerable difficulty and trouble. I succeeded tolerably well by pitching a tent about twelve feet square, made entirely of the fresh cuscus grass, and lined with yellow muslin, very thin, to prevent the water from the outside wetting the furniture, and yet sufficiently fine to allow of a free current of air. This I have pitched in the middle of the large marble hall in the centre of the gardens, the roof of which prevents the sun from striking down, and all four sides being open, the hot wind is able to blow freely through it, which, by keeping the tent constantly wet on the outside, is converted from something resembling the blast of a furnace into a cool and refreshing, though damp breeze, and the thermometer brought down to 84.”—*The Court and Camp of Runjeet Sing, by the Hon. W. G. Osborne.*

PHTHISIS PULMONALIS.

To the Editor of the Medical Gazette.

SIR,

I HAVE been looking into the work of Mr. Bodington, on Phthisis Pulmonalis, recently noticed in your valuable journal, and the practice therein recommended, of allowing to consumptive patients a glass or two of Sherry, brought to my recollection a somewhat stronger remedy for the same intractable disease, given in a much older and more ponderous publication: I mean Salmon's *Botanologia*. At p. 1234 of that work, edit. 1711, Salmon states, "that Diatessaron or Punch, a mixture of four things, has cured such as have been in deep consumption, by drinking it daily for about five, six, or seven months together. Half a pint every morning fasting, eating with it a white ship-biscuit toasted, and soaked in the same; half a pint half an hour after dinner; half a pint about five in the afternoon; and half a pint at going to bed. This quantity may be well enough for men, but the female sex may (if they please) a little diminish the dose, as their reason and experience shall direct them." The author directs the Diatessaron to be made of the following ingredients; viz.

Water, one quart; Brandy, do.; Pure Lime Juice, one pint; Double refined Sugar, one pound. M.

I remain, sir,
Your obedient servant,

LECTOR.

London, Aug. 18, 1840.

RUSSIAN PRACTICE.

Displacement of the Heart, by Jerkoffski, director of St. Peter's and St. Paul's Hospital, at Petersburg.—In consequence of hydrothorax, the heart had been pushed quite to the right side; but as soon as the appropriate remedies had removed the water, the heart returned to its place, as was easily ascertained by the stethoscope, and the patient was discharged cured.

Galvanism in Disease, by Dr. Pehtnikoff, of Bobruisk.—The author employed galvanism in three different ways. 1. Simple galvanism applied by means of one copper and one zinc plate, to spots deprived of their cuticle, by a blister. 2. Compound galvanism or the galvanic-voltaic pile, either vertical or horizontal, consisting of from 30 to 50 plates. 3. Acupuncture, or galvanopuncture.

Paralysis of nearly the whole body, cured by the Extract of the Rhus Toxicodendron. From the *Collectan. Acad. Med.-Chir. Vilnensis*.—A man, aged twenty-seven, took the extract, beginning with three grains a day, and improved as the dose was increased; all

other remedies had been of no avail. When the quantity had been increased to thirty-four grains a day, it was again gradually diminished. The patient was perfectly cured.

LEECH-GATHERING IN RUSSIA.

ONE of the branches of industry prosecuted here is singular enough; it is the gathering of leeches for the Hamburg dealers. When talking with a person connected with this trade, we thought of Wordsworth's friend, of leech-gathering fame; but the collectors of the Ukraine do their work in such a wholesale, unpoetic way, that Wordsworth would not soil his verses with them. Having exhausted all the lakes of Silesia, Bohemia, and other more frequented parts of Europe, the buyers are now rolling gradually and implacably eastward, carrying death and desolation among the leeches in their course; sweeping all before them, till now they have got as far as Pultavia, the pools and swamps of which are yielding them great captures. Here a thousand leeches are sold for four roubles (3s. 4d.); at Hamburg, before reaching which one-half die, the same number is sold for 120 roubles (near £5); and in England the country apothecary pays £9 and £12. 10s. for the quantity which originally cost only 3s. 4d. But of every thousand at least seven hundred die before reaching England.—*Bremner's Excursions in the Interior of Russia.*

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, Aug. 20.

W. J. Mackarsie, Ashover, Derbyshire. — J. Hughes, Brecon, South Wales. — T. Davies, Brecon, South Wales. — H. Pitman, Liverpool, Lancashire.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

August.	THERMOMETER.	BAROMETER.
Wednesday 19	from 50 to 69	29.65 to 29.79
Thursday 20	56 75	29.92 29.95
Friday 21	56 77	29.91 29.82
Saturday 22	57 71	29.76 29.80
Sunday 23	51 70	29.89 29.92
Monday 24	45 68	29.94 Stat.
Tuesday 25	43 71	29.94 29.92

On the 19th cloudy, with heavy rain. The 20th, afternoon clear; otherwise cloudy. A little rain fell during the evening. The 21st and four following days generally clear. A shower of rain on the afternoon of the 22d.

BAROMETER.—A very sudden fall of six-tenths of an inch during the night of the 16th.

Rain fallen, 1 inch and .195 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, SEPTEMBER 4, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

INJURIES AND DISEASES OF THE SPINE,
continued.—SPONTANEOUS DISLOCATION
of Atlas and Axis.—DISLOCATION of Cervical, Dorsal, and Lumbar Vertebrae.—
FRACTURE, CONCUSSION, COMPRESSION,
and INFLAMMATION OF CORD.—CARIES
OF THE VERTEBRÆ.—*Their Nature and
Treatment.*

SPONTANEOUS DISLOCATION OF ATLAS AND AXIS.

SPONTANEOUS dislocation of these articulations is not a rare disease; it has been confounded in more than one instance with wry neck; in several with rheumatism. This affection is spoken of by Hippocrates and Galen, by Ætius, by Van Swieten, who, however, doubts whether it occurs at the occipito atloidal articulation, without direct violence. A case is detailed by Mauchart, in Haller's thesis; another by J. P. Frank; Reil mentions examples; so does Richter; and there are several specimens in Sandifort's museum. Anchylosis at both these points is described by Bertin, Duverney, Sabatier, Sandifort. Boyer believed that we are not at present in a condition to describe this disease; and it was not until Schupke collected and arranged the cases to which I have referred, that a different opinion prevailed: his thesis was succeeded by the treatise on luxations of his master, Rust, who gave a digest of thirteen cases which he had observed.

The affection is distinguished by pain, at first trifling, but afterwards deep and

fixed, at the back of the neck, accompanied by difficulty or inability to move the head: these symptoms may appear to be stationary for weeks or months, increasing however at night; pressure upon the point increases the pain; deglutition is difficult, although, when looking into the fauces, no reason for it can be seen: at this time any movements, either in turning, inspiration, or deglutition, exasperate the patient's suffering; the muscles become permanently contracted, and the head fixed, and the physiognomy assumes a peculiar appearance; there is permanent tumefaction, and the pain extends to the head. All these symptoms indicate the existence of simple inflammation of the articular surfaces and their ligaments: at this period the disease is curable. Soon the inclination of the head to the shoulder increases, the rigidity augments, difficulty of deglutition is greater, respiration is impeded, the voice is hoarse, the least motion is insupportable, and the displacement may than be considerable. The head is most frequently directed to the right; Rust saw it so seven times out of nine; Ollivier twice out of three times: when both sides are affected, Rust says the head is pushed forward. The disease may be limited to the destruction of the odontoid apophysis and its ligaments, as was the case two or three years ago at the Westminster Hospital, and as was observed in a case by Ollivier. In these cases no attempts should be made to right the head, for the pain will be excessive.

When the disease has continued long, symptoms of compression are usually manifested, and these may exist for weeks for months, the atlas being so displaced as to occupy a third, half, or two-thirds of the canal; however, in the progress of the disease the dentatus becomes pushed backwards—an effect of the destruction of the bony support by caries. The pain now becomes intolerable, the patient cannot lie on the sound side, nor for more than a

few minutes on the other; sleeplessness is almost habitual; no movement of the body is made without characteristic precautions on the part of the patient; the opening of the mouth is limited; deglutition is more difficult, and sometimes at this period a soft fluctuating tumor behind the *vclum palati* may sometimes be seen: this is an abscess in front of the bodies of the vertebrae, which has twice been seen to open into the pharynx, leaving a fistulous communication.—(Rust, Schupke.) All the symptoms are now aggravated; those of compression and irritation of the cord are more distressing; and at this time the symptoms of phthisis may be manifested, the cough accompanying which is a dreadful aggravation; the dyspnœa augments, and the patient seems to be asphyxiated. Sometimes death suddenly follows some movement, and it has then been found that the odontoid process has been let loose, and has wounded the medulla.

The progress of this disease is not rapid: in any of the cases to which I have referred life was not destroyed in less than seven months, except by accident; and where proper means have been used in an early stage, the symptoms have been subdued, and the disease cured, in a few months; but in these cases there has been inability to move the head, in consequence of true or false ankylosis. This termination is rare, but it may occur even at a later period of the disease, as in a case mentioned by Rust, and another by Ollivier: ordinarily, however, it is not so: the disease proceeds through months or years, though usually the duration does not exceed twelve months: still there are cases enough on record where ankylosis has occurred, to induce us to persevere in our endeavours to arrest its progress.

In the examination of persons who have been the victims of this disease in an advanced state, we find the condyloid cartilages, the lateral masses of the atlas, those of the corresponding portions of the atlas and the axis, partially or totally destroyed, their circumference presenting osseous spiculae, the osseous tissue carious and excavated, the ring of the atlas broken down into several portions, the odontoid process and its ligaments more or less completely broken down, the dura mater softened, or thickened and rugous, or pus is effused in its cavity. The relation of the occipital bone with the atlas is changed, and the spinal canal is interfered with. Often, in the midst of these changes, the medulla spinalis is comparatively unaffected, and this is especially evident when death is suddenly produced; but more frequently its tissue is softened; sometimes it is converted into pulsatous diffuent matter, its membranes thickened and vascular; sometimes a clot of blood is found at the softened part;

Rust found the vertebral artery ulcerated, and an extravasation of blood into the spinal canal.

Opposed to those alterations we may place the following, which demonstrate the curability of this disease. Riolan states that he saw union of the first two vertebrae without interference with the motion of the head; this fact is repeated by Palfyn and others. Duverney saw a case in which there was ankylosis of the first six vertebrae; the atlas and axis, however were so displaced, that the odontoid process was only two lines removed from the posterior arch of the axis. A case much resembling this occurred to Mr. Lawrence, and the specimen is, or was, in Mr. Langstaff's museum. Hunauld had a specimen of ankylosis of the occipital bone with the atlas, and with it a displacement so considerable that the posterior arch of the vertebrae corresponds to the middle of the occipital foramen: analogous cases are described by Meckel, Frank, Colombo. Van der Wypersse mentions six cases; Sandifort has described and figured six (*Mus. Anat.*); other cases, not less curious, are mentioned by Goetz, Dubreuil. A very singular case was presented to the Académie Royale de Méd. by M. J. Cloquet: union of the axis with the occiput; the anterior arch of the atlas was completely destroyed, and the body of the axis became firmly united with the occiput, so that the odontoid process passed into the occipital foramen. Wigan's case, considering the age of the patient, is not less remarkable. Unquestionably ankylosis may occasionally happen without so much mischief as we have described; such, I apprehend, is a case mentioned by Morgagni (*De Sed. et Caus. Morb. Ep. 62, sect. 11.*)

As a correct diagnosis is here so important, we may consider shortly those affections with which it may be confounded. Rheumatism of the muscles at the back of the neck, and wry neck, have been mistaken for it, and *vice versâ*; but as in rheumatism the whole of the back or the neck is painful, and the pain is not more increased by pressing laterally than posteriorly; and as in spontaneous luxation the pain is circumscribed, and when pressure is made at the point it is greatly aggravated, and also does not present periods of quiet and exacerbation, and does not arrive quickly to a high degree of intensity, a mistake should not often happen. It is not often that the disease can be confounded with wry neck: in the luxation local pain has preceded the twist; in wry neck it is not usually the case. Again, certain conditions of the ligaments of the spine succeeding to rheumatism may produce wry neck, so may inflammatory action of the cellular tissue in the vicinity of the tonsils in scarlet fever, but these can

scarcely be confounded with the affection we are considering.

The disease is most frequently seen in young persons, rarely in old; there is one case, in Graefe's Journal, where the patient was sixty. Scrofulous persons are commonly affected. Some persons have expressed an opinion that the little covering used upon the neck was a cause of the affection, but in that case females would be more exposed to it than males, and this is not found to be the case. That an accidental cold may excite inflammatory action at these points is possible. Some persons have believed syphilis to be an exciting cause, others have suggested rheumatism and gout: to those general causes we may add local agents: a sudden revolution of the head, a fall on the head or neck, or a blow, the habit of carrying burdens upon the head, fractures, spiculæ of bone piercing the articulation from the pharynx, are occasional causes.

Treatment.—Though many general causes may predispose to this affection, we must not rely on general means for its cure; we must resort to energetic local treatment: large numbers of leeches should be applied so long as there is heat at the part, followed by emollient cataplasms, from which patients often derive great comfort. Rust thought otherwise. When the arthritic pain is subdued and only rigidity remains, frictions, by means of stimulating liniments, mercurial ointment, or acetum cantaridis, will be found efficacious. Unless from these means decided good is experienced, they must not be persisted in, for the disease is probably stationary only in appearance, but we must recur to issues applied near the part. Rust prefers the red-hot iron, which he passes over the skin backwards and forwards from the diseased point to the fifth or sixth cervical vertebra. I am quite willing to admit the great value of the actual cautery, but I think Professor Rust's advocacy of it too exclusive. The experience of our countrymen in the treatment of similar affections lower down in the spine is rather in favour of caustic potash. Whichever means we employ, the wound should be long kept open, or what may be better, a succession of issues should be made and healed up. If, in spite of these means, an abscess should form and point in the neck, Rust thinks that the iron should be applied upon the integument over it; he thinks that the irritation so excited occasions the absorption of a certain quantity of the pus it may contain, and that the rest will find an easy vent when the slough is thrown off; he has found this method very successful when the abscess was not large, nor the patient exhausted. It is most important that the head should be kept perfectly quiet, because we may thus favour anchylosis—in

such a case a most desirable result. The necessary immobility is best attained by the use of a proper collar. Although I advise the greatest reliance to be placed on local means, I do not wish to convey an opinion that general treatment is useless; gout, rheumatism, and syphilis, supposing there be reason to apprehend that they are present, should be treated by appropriate means; so should scrofula; and whatever be the treatment employed, benefit seems to be derived from the use of laxatives, not only by rendering efforts at stool unnecessary, but by exercising a general beneficial influence upon the disease.

DISLOCATION OF THE LAST FIVE CERVICAL VETEBRÆ.

All the movements of the neck are not executed between the atlas and axis; a comparatively considerable extent of motion is possessed by the joint action of the remaining five cervical vertebrae. When the forward, backward, or lateral movements are carried too far, the articular facettes of the five oblique apophyses may lose their points of contact, and be no longer capable of resuming their proper positions. A barrister turned his head round suddenly to speak to a client who was behind him, and produced this kind of displacement: usually, indeed, it appears to be a consequence of muscular contraction. Children throwing somersets, or standing on the head, have produced it; but in all these cases it is a dislocation of one side. Walther (*Journal für Chir.*, vol. 3, cap. 11, p. 197) mentions a case where both sides were displaced. Mr. Lawrence has recorded one similar case (*Med.-Chir. Trans.* vol. 13). Mr. S. Cooper mentions another case, and Dupuytren a fourth.

A sudden acute pain is felt at the part, with a sensation of something giving way, with a noise in the posterior and lateral region of the neck, at a height varying with the point of injury. The face is turned to the side opposite to the injury, the patient being unable to redress the head. If we attentively examine the region of the spine, we easily feel the prominence of the spinous process of the dislocated vertebra, and also that the superior vertebrae are more or less deviated from the side to which the face inclines. In Walther's case, both sides being displaced, the head was inclined backwards, the neck was curved, with a decided concavity backwards, and convexity forwards; the anterior parts of the bodies were a little separated from each other, and no fatal injury was inflicted upon the cord. We might, however, reasonably suppose that compression, inflammation, or destruction of the cord, would be the common result.

When the luxation of an oblique apo-

physis is left to itself, the pain gradually ceases, and soon all that remains is the inconvenience of a vicious direction of the neck, and a change in the motions of the head. This is the reason why Boyer, Richerand, Dupuytren, and others, have recommended, as a general rule, that no efforts at reduction should be made, lest, as in the case of Petit-Radel, they should end in injury to the cord, and instant death. But these opinions rest only on single ill-described facts, whilst there are many others, like those of Seifert, in Rust's Mag. vol. 34, page 419, in which the attempts have been crowned with most complete success. Still, in spite of the suggestions as to reduction, given by Brunus, Theodorie, Lanfranc, Paré, Petit, Heister, there is a general indisposition to interfere.

If attempts be made, the patient should sit on a chair, the shoulders should be firmly fixed, the head should be held between both hands, and extended, carrying it a little in its natural direction. When there is a displacement of both sides, the observation of Walther shews that we may succeed. In his case the patient was laid on a bed, and there fixed by three assistants, one keeping the shoulders firm, another making extension upon the head, at first in the direction of the displacement, afterwards in the natural direction of the neck; then, when extension has been carried to a certain point, the head is brought, as much as possible, into its natural direction.

DORSAL AND LUMBAR VERTEBRÆ.

Simple dislocation of the oblique apophyses, and the bodies of the dorsal vertebræ, can scarcely I believe, occur, because of their large articulating surfaces, the number and strength of their ligaments, and the power of the surrounding muscles. Still Rust believes it may; and Sir Charles Bell mentions a case where the last dorsal vertebra was dislocated without fracture. The only case in which these dislocations may ordinarily exist is when there is fracture, which cannot happen without great violence; and then symptoms of concussion, compression, or destruction of the cord, are almost inevitable. Almost every recorded case of dislocation of the dorsal or lumbar vertebræ has turned out to be accompanied by fracture, and some injury of the cord. The structure of these vertebræ, and the nature of their ligaments, do not seem to allow of simple dislocation. Dupuytren described many cases of luxation with fracture; in one case there was a change in the direction of the vertebra, and only a destruction of the intervertebral cartilage, without fracture. In all the cases there was injury of the spinal cord, which caused death. After that, it is easy to determine what we ought

to think of those cases where, in consequence of injury, a projection is produced at some point of the spine, and the patient is unable to straighten himself, but is laid upon his back over a barrel, and the pretended dislocation is reduced. The vertebral ligaments may be partly or wholly destroyed without dislocation. Boyer has proved this; but such injuries may, by damaging the cord, occasion sudden death, with all the symptoms which may be presented in a case of fracture. In all such cases the proper treatment is absolute rest, the most energetic antiphlogistics, and the most powerful counter-irritants; these measures can alone prevent the development of bad consequences.

FRACTURE OF THE SPINE.

Fracture of the vertebræ is a comparatively rare affection. This is owing to their small extent, which, as in most short bones, offers little advantage to contusing bodies; to the mobility which each enjoys through the medium of the intervertebral cartilage, to their deep-seat, and the large masses of muscle which cover and protect them in the greater part of their extent. Again, the spongy nature of their substance, and the great mobility of the column itself, render almost null those forces, which, instead of acting upon a particular vertebra, act upon the whole column. In the latter case the ligaments may be distended or destroyed, but the bones are usually not fractured. Still fracture may occur, and may affect the vertebræ of either region—may implicate the vertebral ring, or only the apophyses.

A fracture may be caused by violence applied directly on the spine; if it be limited it may fracture the posterior lamina of a vertebra, or only the apophyses; but, ordinarily, fractured spine is a consequence of a fall from a height; it may be produced by a heavy body passing over or falling upon the back, by projectiles, and it has succeeded to exaggerated muscular action. Reveillon describes the case of a soldier, a good swimmer, who plunged, head foremost, into the Sambre; his comrades, after a few minutes, seeing him motionless, proceeded to his assistance, and brought him to land. It was found that there was no fracture or luxation of the limbs, but that they were paralyzed; he could not hold up his head, the skin was insensible, a severe pain was felt at the inferior and lateral part of the neck, but there was no sign of external injury; he had priapism, and frequent desire to make water. He said that, at the moment of plunging into the river, he discovered that it was not so deep as he had conceived it to be, and that he had suddenly bent his head back to

prevent its striking the bottom, and that he as suddenly lost his senses. By frictions, warm fomentations, and baths, his suffering was alleviated, the priapism ceased, the desire to make water was much less frequent, the paralysis of the limbs was less complete, but in the evening delirium came on, and during the night he died. After death it was ascertained that blood was infiltrated around the vertebral column; that the spinal canal external to the dura mater was full of blood; and that there was fracture completely through the body of the fifth cervical vertebra. A violent inflexion has, in some cases, been said to produce a like effect. But though it may occasion a great strain upon the fibrous tissues uniting the vertebrae, a prodigious force must be necessary to fracture; and if it happen, it will be complicated with some injury to the spinal cord, or to the nerves which set out from it.

Symptoms.—When the spine is fractured the patient usually cannot raise himself, or, if he does, he falls down again. He feels an acute pain at a point corresponding to the fracture—a pain which is increased by the slightest movement of flexion, extension, or rotation of the trunk; besides that, he experiences numbness, weight, or complete insensibility, with loss of motion in all parts of the body which derive their nerves from a part of the spine below the injured point. This state is dependent upon concussion or compression, by a fragment of bone or extravasated fluid. Immediately, or soon after the accident, a paralysis of all parts below the fracture usually supervenes; paralysis of the inferior extremities, the bladder, and the rectum, when the fracture is situated at the inferior part of the dorsal column; accompanied with difficult respiration and tympanitis, when the fracture is higher up in the same region. The position in bed, in consequence of the paralysis of the lower limbs, causes pressure; and gangrene at the sacrum from that cause, and from deficient nervous energy, is the common consequence. By little and little the paralysis usually extends, and the patient dies exhausted, after a period of time, variable in extent; it may be two, three, four, five, six, or even more weeks. If the fracture be situated as high as the third cervical vertebra, and be accompanied by displacement, death is usually almost immediate. If it be situated immediately below the origin of the phrenic nerve, paralysis of the arms, the viscera, and the legs, is the usual consequence. Yet this paralysis is rarely complete; sometimes one arm is more severely affected than the other. That is usually the case in oblique fractures; respiration is much disturbed, and death usually follows between the third and the seventh day (Cooper). When inflammation sets in,

delirium, agitation, and priapism, are commonly seen;—but, in Sir B. Brodie's experience, priapism does not occur in the absence of paralysis;—the patient endeavours to sit or stand, and death usually occurs about the fifth day (Bell). If the inflammation be of a chronic character, death follows later, from compression, or from some structural change in the cord. Unquestionably these signs, succeeding to a violent blow on the part, leave usually little doubt of fracture of the spine. But when the fracture is limited to detach a spinous or a transverse process, the evidence of the kind of injury is often very inconclusive; it may be very difficult to distinguish it from simple contusion of the soft parts. In some cases no crepitation can be felt, and there may be little deformity; for the tumefaction may prevent us from acting directly upon a spinous process for the purpose of ascertaining whether it be moveable, and whether a crepitation may result; and this tumefaction may mask any deformity; and the cord itself may be seriously injured, though the violence was insufficient to produce fracture. It may, in such cases, be found very difficult to distinguish fracture from concussion; but then the patient suffers no inconvenience on this account, because the same treatment is required in either case. In either case, whether concussion or compression be the consequence of the injury, they are manifested by the same symptoms—paralysis; but if we carefully examine the progress of the case, and if compression be produced, not by a fragment of bone, but by extravasated blood, we may sometimes follow the progress of the paralysis, and determine that it is owing to a still increasing extravasation, and not to a concussion, the effects of which are never more intense than at the moment of the accident. The effects of contusion are those of inflammation of the cord; they begin to manifest themselves in five or six days after the injury.

We see that fracture of the spine is a most grave injury, the gravity dependent, in most cases, more upon the accidents which follow it than upon the fracture itself; but it is almost always mortal. The rapidity with which this termination is brought about has reference to the extent of the injury, and its nearness to the superior part of the cord. Yet gun-shots have produced fracture, and the case has done well; and in my case, before alluded to, the violence attending the fracture was great, but no bad symptom was developed.

Treatment.—In the treatment of fractured spine, the course ordinarily followed is to place the patient on a bed, lying on his back; but some persons, among them Sanson, have suggested that by lying on the back certain inconveniences are neces-

sarily incurred which might be avoided by placing the patient on his belly. Among those inconveniences are the occasional aggravation of the symptoms from pressure upon the injured vertebra, the necessity for moving, if cupping, or any other applications to the part, are indicated. But then if we place the patient on his belly, it may be necessary to turn him two or three times a day to introduce the catheter, and to many people the position is a very tiresome one. Whatever the extent of injury, our first care is to anticipate, if possible, the development of inflammation of the cord; for this purpose we use, largely, antiphlogistic means, and keep the patient perfectly quiet. If, in spite of all our efforts, inflammation of the cord has been developed, and if, by the means we have used, it has abated, counter-irritants may be found useful in dissipating it; and at this period purgatives are often found very advantageous. If only concussion existed, it may, if slight, give way completely; but if, after the period when inflammation might reasonably be expected, numbness remains, blisters to the spine will occasionally dissipate it. Retention of urine, which accompanies these injuries, requires the catheter, and it should be used, at least, twice a day, and even then the urine will yield a strong ammoniacal odour. It has been recommended that a catheter should be left in the bladder; but I object to it, because it is very apt to inflame or otherwise injure that organ. Constipation will sometimes yield to mild laxatives; but, in others, the blunted sensibility of the intestines, requires energetic stimulating purgatives, such as croton oil, and terebinthinate enemata. The next thing we have especially to guard against is the occurrence of sloughs upon the sacrum, or other parts upon which the body rests; and it is worthy of remark that, when the patient has been laid on his belly, the knees have promptly suffered. If these sloughs are developed, they are very apt to be aggravated by the urine dribbling away, and the fæces passing under the patient. To lessen this, good warm poultices must be applied, and frequently renewed, until the sloughs are thrown off, or even after.

In a few cases the patient has survived; the fracture has been consolidated, but the paralysis persists: we then apply moxas or issues on each side of the fracture; and upon the limbs we use frictions, baths, douches, or any similar means of rousing the dormant energies. When they fail, and we have no reason to apprehend that inflammation exists, we may try strychnia: by some persons great eulogiums are passed on it; but I have never seen, in those cases, much benefit to accrue from it, or from any other medicinal or other agent.

Such are the principles of treatment in

these cases, but they do not in certain cases exclude the employment of other means; for instance, when a fracture affects the apophyses, or the posterior portion of the vertebral canal, and is accompanied with displacement, some persons advise that we should endeavour to restore the fragment to its proper situation. If in a case of this kind there were evident signs of compression, such a course might be justifiable; it is a species of meddling, from which good might possibly result, but the chances of increased mischief are infinitely more to be dreaded; and if the fracture did not extend beyond the apophyses, there could be no necessity for it. In Mr. Barlow's case it did not seem that much good resulted from it (*Med.-Chir. Trans.* vol. 17), nor in that of Mr. Hardwick.

When there is reason to conclude that the spinous process is depressed, and the evidence of compression by the posterior half of a vertebral ring is pretty complete, the advice has been given, and acted on, to cut down upon the part, and endeavour to relieve compression. Viguier proposed the trepan for the purpose; and Cline, Barton, Tyrrel, Edwards, Wickham, Attenburrow, and Laugier, have acted upon the suggestion. Before I record the results of the operation, I may call in question the prudence of resorting to it. The posterior laminæ of the vertebrae are too profoundly situated to allow of such an operation being lightly undertaken; the symptoms proper to point out the exact seat where it should be applied are often wanting, for experience demonstrates that they are very similar, whether there be concussion, compression by blood or bone, or even a severe strain. Take the following cases as evidence:—Unexpectedly a sack of flour, weighing nearly three hundred pounds, fell on a man's neck; an acute pain was felt at the bottom of the neck: he was carried to the hospital; the spinous process of the seventh cervical vertebra was found more prominent than natural; the limbs were paralysed; respiration was laborious; the rectum and bladder did not act; the patient died at the end of five days. After death a fracture of the posterior laminæ of the seventh cervical vertebra was discovered, together with a depression of one portion which compressed the cord. A mason fell from a height of fourteen feet, and was insensible; when he acquired consciousness, he found the lower limbs paralysed; the urine was retained, so were the fæces at first, but passed involuntarily afterwards; fever supervened; respiration became laborious; and he died on the twelfth day. Bloody serum was effused, so as to fill the canal of the dura mater, from its inferior to its middle region, and compressed the cord. A stocking-weaver fell into a ditch, injuring the loins: soon he found paralysis

of the lower limbs, the rectum, and the bladder. The disease followed the same course as in the former case, and the patient died. Neither fracture nor any other lesion of the cord or its covering, nor extravasation, was found. A man amusing himself with some friends in feats of agility, suddenly found a dragging and sharp pain along the spine; the next day the lower limbs, the bladder, and the rectum, were paralysed; the disease took its ordinary course, and he died in a few weeks. The parts upon examination appeared perfectly natural, as in the former case. In the first case it is possible that the trepan might have been useful, but the symptoms were similar in the other three; and it is clear that the trepan should not have been employed in those cases. In 1814 Mr. H. Cline resorted to the operation at St. Thomas's Hospital: the patient died on the second day. In the year 1822, in a case of fracture of the posterior laminæ of the ninth and tenth dorsal vertebræ, the patient, a man of 30, had paraplegia; the operation for the purpose of removing pressure was performed by Tyrrel; there was considerable mitigation of the symptoms, but the patient died with symptoms of peritonitis on the fifteenth day. Barton's patient died on the third day, after a momentary return of sensibility. Laugier's patient died on the third day; and Edwards's case did well; but then injury was limited to the inferior part of the lumbar region, where the cord no longer exists, but is divided into a multitude of filaments, and where pressure, to a considerable extent, is borne without bad consequences. Certainly the trepan here offers many more difficulties than in the cranium; but the facts we at present possess are insufficient to enable us to decide clearly on the occasional propriety of resorting to so grave an operation. In analogous cases it has been recommended by Sir A. Cooper, but Sir C. Bell thinks it unjustifiable.

We may now consider very shortly wounds, concussion, compression, and inflammation of the spinal cord—immediate consequences of violence.

When lesions of the spinal cord are produced by a penetrating or cutting instrument, external symptoms and the direction of the wound are usually sufficient to unmask the injury, and inform us of the probable situation of the lesion of the cord. When the accident results from a fall or blow, there may be ecchymosis, or a projecting spinous process, to point to the seat of injury; in the absence of these signs the patient may direct us to it by describing the seat of pain. Loss of sense and motion in all parts below the injury is the common sign; in some cases only one side may be affected, but gradually it extends to the other.

Concussion.—I have no power to enable you in the majority of cases to distinguish between concussion and compression; but this I regret the less, because the treatment adapted to one is, in most cases, proper to the other disease. Loss of sensation or motion, or of both at the same time, involuntary excretion or retention of fæces and urine, are the ordinary symptoms of both: there may be convulsions, as in Stoll's case, where tetanus succeeded to concussion of the spine. Sometimes the paralysis, at first limited to the legs, gradually extends upwards, and destroys life, at a time when hopes of cure were entertained. When the concussion is not very severe, the symptoms may gradually yield; sensation and motion are gradually restored, sometimes together, sometimes the sensibility first; but the excretion of urine and fæces may long continue involuntary. There may be a very sensible decline in the temperature of the paralysed part, as well as an absence of transpiration. But I know no case of erection of the penis in simple concussion: this is a very common symptom in other affections of the cord. Concussion is not so constantly fatal as compression, though it may destroy life rapidly, and leave no trace of disease of the cord; there are, however, very many examples of recovery from its effects. We must not estimate the intensity, or at least the danger, by the intensity of the immediate injury: the fall may have been from a great height, and unbroken; the immediate symptoms may have been very urgent, but the patient may get well. Whilst a man may slip down in his own room, the immediate symptoms of concussion may have been comparatively slight, but they end in death. The difference depends on this circumstance; in the one case the concussion determines the development of disease of the cord; in the other it does not. Peter Frank, when speaking of the gravity of injuries of the spinal column, relatively to their influence on the cord, mentions four cases where the patient died paralysed, from falling on the back from a high tree. The spinal cord was examined with great care, and there was no extravasation, trace of inflammation, or any other lesion of the cord or its coverings. Hippocrates was familiar with this effect; he says, "Alioqui multo plures erurum et manuum impotentia et corporis stupore afficiuntur, uniscunque supprimuntur, quibus quidem ex vertebræ gibbo neque intrâ neque extrâ excesserint, sed in directum spinæ vehementur concussi fuerint." (Lib. de Articulis.)

Treatment.—In these cases general bleeding must first be employed, and must be repeated as often as any symptom indicates the necessity. If the patient be already feeble, we must rely more on local bleeding

and counter-irritation; but even then we should commence with a general bleeding, proportioned to the patient's strength and the urgency of the symptoms. If there be retention of urine we have recourse to the catheter; if there be obstinate constipation, either enemata or mild purgatives should be administered. Dry frictions upon the paralysed parts are occasionally useful; and the diet should be spare. From strychnia I have never derived any benefit; still in other hands it has had different effects, and therefore I should say that when inflammatory symptoms have passed away, the health is good, and we have no reason to suppose that the paraplegia is consequent upon softening succeeding to compression, this medicine should be tried.

Compression.—When the disease is compression of the spinal cord, there may be loss of sensation and motion below the injured point; it may at first affect one limb, and gradually affect the other: it may indeed be confined to one, may affect more particularly the anterior or posterior portion of the column, and manifest itself by its effects, more decidedly upon sensation or motion, or *vice versa*: when one side only is affected, the same side of the cord is affected. Paralysis of the bladder always exists in lesion of the cord, and is first manifested by retention, followed by incontinence. Cases have occurred, it is true, where the functions of this organ were not deranged: Desault's case was of this nature. The paralysis of the rectum does not always exist; but we are not to assume that because there is constipation, there is not therefore paralysis, because retention of *fæces* may sometimes be owing to paralysis. Sometimes involuntary dejections immediately follow the accident; usually, however, this happens when the patient has survived the accident some time; it then succeeds to obstinate constipation. The intellectual faculties are usually undisturbed; there may be a momentary loss of consciousness, depending on slight concussion of the brain. The pulse varies according to the different complications which accompany the injury; usually it is regular. But these symptoms undergo, as we have seen, certain modifications depending upon the portion of the cord affected. Compression suddenly produced, especially by luxation or fracture, usually destroys life, sometimes very rapidly; but to this rule there are many exceptions: Ollivier's 17th case is a striking example. We may admit certainly with Caspar, that slight compression of the dorsal or lumbar region, without other complication is not absolutely mortal. But these are cases over which our art has generally little control; first, because we cannot always make out that the symptoms

satisfactorily indicate compression; and next, if they did, we have no certain means of relief. The general means of treatment are similar to those recommended in concussion; but here, of course, the question of elevating a depressed bone may arise.

Inflammation.—If the injury, without producing serious concussion or compression, have excited acute inflammatory action in the spinal cord, it is usually manifested by the followingsymptoms:—Numbness in the fingers or toes, sometimes difficulty in moving them, and a disagreeable sensation of cold. These symptoms may be successively developed in the limbs, and may extend to the trunk. Convulsions may occur from the first. At the same time, or soon after the occurrence of these symptoms, a deep and more or less acute pain is felt at a point of the spine corresponding to the seat of inflammation; it may extend along the whole spine, and may be exasperated by motion. It is not commonly increased by pressure. Khloss states that it is increased by lying on a feather bed, but not by a mattress. Usually, however, we can ascertain how far the disease extends by striking lightly upon each spinous process. Sometimes the paralysis ascends, affects the upper parts of the body, prevents respiration, and causes asphyxia. Usually the paralysis is at first manifested on one side of the body, and afterwards extends to the other. As a rule, when the inflammation is limited to the dorsal and lumbar regions, the lower limbs alone are affected, the upper when the cervical region is the seat of disease; but this is not always the case. The functions of the rectum and bladder suffer, more particularly the rectum; whence constipation. For some time the excretion of urine may be voluntary, but retention usually comes on. The pulse is ordinarily frequent, full, irregular, and sometimes tumultuous, the respiration is frequent, and sometimes laboured; in fact, fever is developed. These are the ordinary signs, but many sympathetic actions may be set up, varying with the region affected. If the *cranial* portion suffer, the intellectual functions may be troubled; there may be delirium trismus, grinding of the teeth, a red dry tongue, difficult deglutition, followed by hemiplegia and general paralysis, and articulation may be impossible. If the *cervical* portion be affected, there is severe pain in the back of the neck and rigidity of its muscles, as well as those of the arms; they may be convulsed or paralysed; the respiration is difficult and diaphragmatic; the dyspnœa increases, and the patient dies. If the *dorsal* portion suffer, there is often convulsive action of the trunk, in which the limbs do not participate; respiration is hurried, the heart's action is irregular, and there is fever. When the lum-

bar portion is inflamed, the lower limbs are paralysed, the urinary and intestinal functions are disturbed, and there is deep-seated pain in the loins.

When the disease is *chronic*, the symptoms are similar to those I have described, but they are more slowly developed. A painful state of the limb may exist long before paralysis, and when the paralysis follows, the limb may become retracted; and the contraction cannot be overcome without great force and much pain. The limbs may be agitated, as it were with galvanic shocks, if we pass the hand along the course of the nerves. There is a depression of temperature, absence of perspiration and continual exfoliation of the cuticle. If the patient can walk at all, he is bent forward, complaining of numbness or pain along the spine. We generally find the condition of the cord to exercise a very decided influence upon the heart's action; it is energetic and irregular. As to the abdominal organs, besides the changes in the urinary excretion, and the constipation, there is a cord-like tightness around the abdomen, and then the lower limbs are moved with more difficulty.

If acute, the disease usually destroys life on the third or fourth day. In Chevalier's case the patient lived a fortnight. In Maccari's eighteen days. The disease is very rapid when the dorsal portion is affected; whether this be, as was supposed by Earle, because the canal is very narrow there, I cannot say. If the disease extend beyond ten days it may be cured, or may last for months. A patient with chronic inflammation of the cord may live, (paralysed it is true) for many years, but long before that bed-sore is usually manifested. Whether, considering the obscurity of the early symptoms, and the possibility of their being mistaken for rheumatism, we are to accept these old cases as undoubted inflammation of the cord, may be a matter of question.

Treatment.—General and local bleeding, warm baths long continued, rigid diet, and laxative clysters, are the ordinary means of treatment. Cold applications have been used with bad success. When, by the means indicated, the acute symptoms are abated, much good has been derived from douches of salt water upon the spine, at a temperature of 90°. They should be directed from a height of six or eight feet; the opening of the tube should have a diameter of half an inch to an inch. At the same time a caustic issue should be made on either side of the spinous process under which the pain is most felt. If the disease be chronic, those means must be used with moderation, but they must be continued long when the pains are severe. When, however, the paralysis exists without much

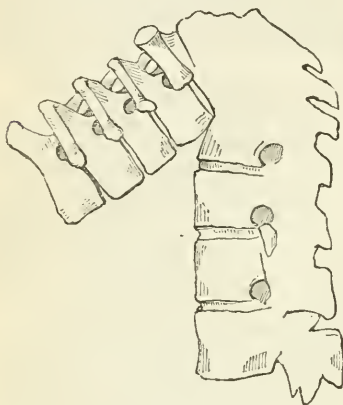
pain and excitement, the time for the energetic employment of counter-irritants has arrived. In many of these cases more or less irritating purgatives seem to produce a good effect. Dry frictions must be frequently employed; and as soon as the part has been well rubbed, some persons say they have derived much benefit by placing flannel two or three times doubled along the spine, and over it oiled silk, by which a kind of continual local vapour bath is applied. Douches, such as I lately described, have also been found useful. Blisters, moxas, setons, and issues along the spine, are also indicated. The application of strychnia upon the blistered surface has also been strongly recommended. The bladder and rectum must be attended to.

CARIES OF THE SPINE.

In the whole round of our profession there is no disease a proper knowledge of which it is more important to possess than that we are about to consider, whether we regard the frequency of its occurrence, or its disastrous consequences. Much discrepancy exists in the works of different authors when treating this subject, in consequence of confounding two very dissimilar diseases in a single description. In the one case the affection is a proper caries, commencing in the superficial structures, attacking, as it were, the cortical substance of a vertebra, whilst the other portions of the bone remain unchanged; the other, often tubercular, affects the less dense inner structure of the vertebra, reducing it to a soft pulsatious mass, with tumefaction. In the first, the patient feels a fixed pain in the affected region of the spine, which is often mistaken for a rheumatic pain; it increases when he stands or walks long, but is very little increased by compression. It goes on, and rigors and slight fever indicate the formation of abscess. In the second, the change in structure is marked by a dull pain, by an uneasy sensation in the epigastric region, an uncomfortable constriction of the chest, feebleness and coldness of the legs. The change of consistency in the bodies of the vertebra renders them incapable of supporting the weight of the superincumbent parts; they give way, the spine is flexed, and a gibbous curvature takes place, whose projection is backwards. In many cases the spinal cord is compressed, and the inferior extremities are paralysed. This is the disease known as Pott's curvature. In the first case, as in the second, the matter resulting from this caries may fuse along through the surrounding cellular tissue, and form purulent collections at a distance from the diseased part.

This caries may affect any of the verte-

bræ—the first, the second, the third, or even the occipital condyles; the odontoid apophysis may be entirely separated from the body of the axis by it. But most commonly it is at the dorsal and lumbar portions of the spine that the disease is seen. I have known a spine where the angle formed at this point was 90 degrees, and the bodies of the last cervical, the first, second, third, fourth, and fifth dorsal vertebræ, were completely destroyed. Delpech mentions a case where the disease had destroyed the bodies of twelve vertebræ. The following case from Cruveilhier is a good specimen of this curvature.



Caries of the bodies of the vertebræ most commonly affects young persons, at that period of life when the symptoms of scrofula are most generally manifested. It may occur at a later period. Mr. Pott, however, never saw it in a person beyond forty. Brodie has seen it in a person of forty-five. In youth it is said to be too frequently developed as a consequence of excessive masturbation. Boyer said he had frequent opportunities of ascertaining this. Lobstein treated a patient where this was probably the case, a scrofulous young man, considerably emaciated, who had also an ulcer connected with caries of the instep. In the course of treatment he complained of a pungent pain at the right side of the chest near the spine; it yielded to a blister. The suppuration at the instep suddenly ceased, symptoms of tetanus were developed, became intense, and the patient died. The first cuneiform bone was carious; there were two lumbrici in the ileum; the vesiculæ seminales were very large, renitent, inflamed along their external surface, and full of what appeared to be healthy pus. In the vertebral canal was a tumor which lessened its diameter and slightly compressed the cord. This tumor was an abscess under the posterior ligament; it was full of a thick white plas-

ter-like pus. The body of the last dorsal vertebra was destroyed.

Caries may occur in a rheumatic patient, and it is believed is excited by it. A woman of 40, who had once borne a still-born child, but was in good health, while carrying a burden on the head wished to clear a gutter; at the moment she felt an acute pain in the right groin; from day to day it increased, and ultimately extended over the whole abdomen, which became hard, contracted, and painful. A severe pain at the epigastrium, and another still more severe in the dorsal spine, prevented the woman from lying on either side. A large bleeding relieved her, and the whole of the pains, except that in the groin were much better; that, on the contrary, became fixed above and behind the pubis, extended to the left groin, and became extremely intense. The uterus was suspected, and the suspicion was confirmed by the discovery of fissures, and great heat at its neck, and by the diminution of the pain during menstruation. The affection was conceived to be rheumatic, and the pains became agonising, extending to the sacrum and the thighs, and accompanied by difficulty in passing urine, and in respiring. Opium produced only a momentary calm; soon after the extremities became paralysed, the strength decreased hectic, with nocturnal delirium and obstinate diarrhœa, exhausted her, and she died. The peritoneum presented traces of old inflammation, the mesenteric glands were tubercular, the right side of the bodies of the lumbar vertebræ were covered by a tumor, which when cut into furnished a blackish red matter; the bodies of these vertebræ were broken down, the intervertebral substance was intact; the vertebral canal was fairly opened, but the disease did not extend further, it had not affected the membranes.

The disease may be excited by external injuries, but I apprehend a strong disposition to it already existed in these cases.

The first effect of this form of caries is, as we have seen, to soften the body of a vertebra so as to render it incapable of supporting the weight of the trunk; the vertebra above the point losing all support from the body, but sustained behind by the articular apophyses and posterior portion of the ring, which are not softened, tips forward as it were, so that its spinous process, brought into nearly a horizontal direction, projects under the skin, causing a gibbus. An angle is thus described by the spine, with a projection or apex backwards. As this condition may implicate many vertebræ, a singular change is brought about in the patient. He grows shorter, his limbs look too long for his height. He avoids all movements which flex the trunk forward; in walking, the legs are slightly

flexed, the neck extended, and the face turned up. The position of the trunk, when the patient is in bed, is very similar to that which he presents when he is up; but he can only lie on the side. If the disease affect the cervical region, the trunk is straight, but the head, deprived of support, is inclined from one side to the other.

Symptoms.—In a large number of cases, if the gibbosity be considerable, and if it have occurred suddenly, it may exercise a fatal influence on the cord or nerves: the patient complains of a sensation of pinching, or tearing, in the thighs and legs, together with convulsive twitching and numbness, and he cannot command completely all their movements; sometimes, suddenly or gradually, paraplegia comes on, with or without paralysis of the bladder and rectum, and often accompanied with rigidity of the limbs. But these effects are by no means constant, for there are a great many cases on record where the substance of the cord has been almost completely interrupted, without any difficulty of moving the limbs being experienced.

Pott says, "If the patient be a child, the account most frequently given is, that for some time previous to the incapacity of using its limbs it had been observed to be languid, listless, and very soon tired; that it was unwilling to move much or briskly; that it had been observed frequently to trip or stumble, although no impediment lay in its way; that when it moved hastily or unguardedly, its legs would cross each other involuntarily, by which it was often and suddenly thrown down; and that if it endeavoured to stand still and upright, unsupported by another person, its knees would totter and bend under it; that it could not, with any degree of precision or certainty, steadily direct either of its feet to any particular point, but that in attempting to do so, they would be suddenly and involuntarily brought across each other; that soon after this it complained of frequent pains and twitchings in its thighs, particularly when in bed, and of an uneasy sensation at the pit of the stomach; that when it sat on a chair or a stool, its legs were almost always found across each other, and drawn up under the seat; and that in a little time after these particulars had been observed, it totally lost the power of walking.

If the patient be an adult, and no violence has been committed or received, he will tell you that his first intimation was a sense of weakness in his back bone, accompanied with what he will call a heavy dull kind of pain, attended with such a degree of lassitude as rendered a small degree of exercise fatiguing; that this was soon followed by an unusual

sense of coldness in his thighs, not accountable for from the weather, and a palpable diminution of their sensibility. That in a little time more his limbs were frequently convulsed with involuntary twitchings, particularly troublesome in the night; that soon after this he not only became perfectly incapable of walking, but that his power either of retaining or discharging his urine and fæces was considerably impaired, and his penis became incapable of erection." This is a graphic description of the symptoms as they usually occur, but there is much variety in this respect; for instance, sometimes the arms are affected, and in many cases the symptoms are not confined to parts below the diseased point.

In many cases, however, with all these helps, the diagnosis is very difficult, especially in children before they can walk, when one important element is wanting. Many means have been pointed out for the purpose of overcoming these difficulties at an early period, when there is no posterior projection. Copland recommends pressure upon the part, as the diseased vertebræ are very sensible to its action. He also advises that a sponge with hot water should be passed along the spine. Wherever the vertebræ are unaffected, the patient is only sensible of the contact of warm water, but at the diseased point a burning heat is felt. Frank thinks this a good test. Wenzel conceived that the pains should increase by pressing on both scapulæ, or by employing ammoniacal frictions on the part. Stiebel believed that a hot bath, with carbonate of potash in it, left no doubt of the precise point of disease. But you will, in many cases, find all these means fail. In fact, I would engage to shew cases where the disease did not exist furnish the indications just mentioned. I regard as most important the ordinary attitude of the patient. This sign exists even before there is much feebleness of the extremities. The knees are flexed, and the head inclined backwards; in walking the arms are flexed at the elbow, which is brought close to the trunk; the patient constantly seeks a rest for the hands; he frequently rests them on the hips, and when he stoops he rests them on the thighs. In bed he does not turn himself without much difficulty. But when, in addition, the curvature exists, and abscess is developed, we are relieved of all further difficulty in diagnosis.

I had lately an opportunity of examining one of these cases after death; several vertebræ were carious, superficially, to a considerable extent. The anterior ligament was detached, and formed, with the surrounding cellular tissue, a large sac, filled with purulent matter, more con-

sistent than that which had been flowing out; a tortuous sinus established a communication between this sac and the external tumor; the bodies of two vertebræ were completely destroyed by the evolution of tubercles; the fibro-cartilages had not suffered much. In some cases the vertebral ligaments are softened, the intervertebral cartilages are destroyed, the spinal cord and its coverings may exhibit marks of irritation, or inflammation; around the carious point a large collection of purulent fluid may be found, in the midst of which a kind of stalactiform osseous production is seen, more or less completely connecting the vertebræ above and below those destroyed; and giving a beautiful example of the efforts which nature makes to repair the loss of substance which has been sustained. When the caries has been cured, we find the loss of substance surrounded by irregular ossification, by which the destroyed bone is replaced, and the cavity filled up. If we examine a number of specimens of vertebral caries, and compare them one with another, we see that the causes which produce them bring very sensible differences in their appearance. Thus, in scrofulous caries, the disease affects many vertebræ, and does not spare the intervertebral substance; while, in rheumatic caries, a contrary condition is presented. The vertebral ligaments constantly remain unaffected in the midst of the destruction of the bony tissues,

choleric temperament. I suffered in the autumn of 1810 from a protracted and violent bilio-nervous fever; at the end of that year, and until 1812, I had several quotidiens and tertians; and in 1813 I had a miliary typhus fever (*Kriegstypus*). Ever since these illnesses I perspire copiously, and from slight causes; I am also inclined to diarrhœa, but I rarely labour under it, because I avoid all such meats and drinks as would be likely to bring it on. My bowels, however, are open two or three times a day. In order to keep in very good health, I require a bit of hard work once a week or fortnight—an object which I am generally fortunate enough to obtain in the practice of midwifery." (p. 25-6.)

The ladies are described in the following manner:—Ch., a lady aged 45, of short stature and delicate constitution, but healthy, and of a sanguine temperament. L., a young lady of 18, tall and slender, of a delicate and arterial constitution, a sanguine temperament, and quite healthy. Th., a girl aged 12, of a middle-size, and stout for her age, of an arterial florid constitution, and sanguine temperament; she likewise was perfectly healthy. Both the last, adds Dr. Jörg, live with the utmost simplicity: they eat meat and vegetables, but take neither wine nor coffee, and but rarely tea; they usually drink water, milk, or a weak pale ale; and, though they work and study, do not neglect exercise in the open air.

"When we tried experiments with any remedy, we followed no other dietetic rules than those by which we had been guided previously. We lived regularly in every respect, just as a healthy man must do, who wishes to remain healthy. The students of Leipsie, though their board is quite sufficient for the purpose of nourishment, do not find the dishes too numerous, nor prepared with too much art, so that they are not likely to be hurt in this way. Many of them drink coffee, but, partly by the roasting, and partly by the boiling, this has lost its narcotic power, and hence does not exhibit those poisonous effects which the exaggerated representations of many physicians would make us believe that it produces upon the healthy. Most of the students in Leipsie take wine only on rare occasions, and though a few of them drink beer, it is, for the most part, a very weak beverage, not capable of destroying the effects of the remedies experimented on.

"But these things are of less consequence than is commonly supposed, provided the ordinary course of life is adhered to; as for myself, I lived as usual during my experiments. At 5 or 6 in the morning I took two cups of coffee with milk; at 7 or

MEDICAL EXPERIMENTS.

BY DR. J. C. G. JÖRG.

ABOUT the year 1822 a society was formed at Leipsic for the purpose of trying the effects of medicines on the healthy: it consisted of Dr. Jörg, an eminent accoucheur of that town, and twenty-six other persons, three of whom were ladies. The results of some of their experiments were published by Dr. Jörg; and the account is preceded by observations on the advantages to be derived to medical science from experiments of this kind, and by a descriptive list of the members of the club. Thus, No. 4 was Mr. Frederic Conrad Steinbach, aged 26, from Pegau, tall and stout, of robust constitution and sanguine temperament; he took his degree May 13, 1823. No. 21 was Mr. Charles Ottomar Otto, aged 22, from Weissenfels, tall and lean, of lymphatic constitution, and sanguineo-choleric temperament. No. 22 is Dr. Jörg himself, who gives the following account of his own physical conformation:—

"I am 45 years old, stout, of a middle size, robust constitution, and sanguineo-

8, generally speaking, a little white bread and butter; at 1 I dined on soup and meat, with or without vegetables, and at 8 or 9 I supped in the same style. Both at dinner and supper I have long been in the habit of taking half a bottle (or a pound) of white Würzburg, or red Assmannshäuser wine; and I continued to do so during the experiments. Had I altered my usual mode of living, had I given up wine and coffee, I should have been out of tune, and perhaps made myself half ill. The result justified my mode of proceeding; for most of the medicines had the same effect on me as on the other members of the experimental society. Nay, in many cases, it was quite clear that medicines had less effect on those individuals who drank milk, white beer, or plain water, than on me who use other beverages. If any of us slept ill at night, we intermitted the medicines, until due rest had restored our body to the proper degree of sensibility."—(p. 21-23.)

The medical substances, of which the effects are reported and commented upon, are seventeen in number; namely, nitre, cherry-laurel water, bitter almond water, Vauquelin's prussic acid, Von Ittner's prussic acid, valerian, serpentaria, the flowers of arnica, the root of arnica, camphor, castor, musk, St. Ignatius's bean, assafoetida, opium, digitalis, and tincture of iodine.

Unless the contrary is expressly asserted, it is to be understood that the dose mentioned was taken once only in the day. Although, in order to comprise this abstract within reasonable bounds, we must in general content ourselves with giving the results, and pass over the details of the experiments by which they were arrived at, we will make a single exception to our rule, and give the commencement of the numerous trials on which Dr. Jörg has founded his theory of the operation of nitre.

"On the 27th February, 1822, at nine A. M., Engler swallowed a grain of nitre, rubbed down with five grains of white sugar, but without any effect.

On the 2d of March, at the same hour, he took three grains of nitre and six of sugar, and a few hours afterwards his urine was more copious, darker, and redder. After the lapse of several hours a sediment formed, which, when the urine was shaken, rose in flocculi. On March 4th, at the same hour, Engler took four grains of nitre with the same quantity of sugar; this dose was followed by the same increased secretion of urine, and by a still more frequent desire to go to stool, without more frequent evacuations of the rectum. The same effects were produced by five grains

taken on the 5th of March, and six grains on the 6th. On the 7th of March seven grains were taken at nine in the morning, and again at five in the afternoon; on which the experimenter observed throughout the day that a pale and turbid urine was frequently discharged, and that there was repeatedly a sensation of pressure downwards to the anus, without more than the usual evacuations.

On the 8th of March he omitted the nitre; the urine was reduced to its regular quantity, and the pressure towards the anus was no longer felt. Two doses, of eight grains each, being taken on the 9th of March, at 9 A. M., and 5 P. M., the same sensations were experienced as on the preceding day, though not in a greater degree than from the smaller doses. On the 11th of March he took two doses of ten grains each, at the same hours as before, and the urine became still redder and more turbid, but was not secreted in greater quantity. Though there was repeatedly the sensation of bearing down towards the anus, the evacuation did not take place as usual in the morning, but towards evening. On the 12th of March two eleven-grain doses were taken at the same hours, and with the same results. On the 15th of March he took two fifteen-grain doses at the same hours, which were followed by an increased discharge of clear urine. The tenesmus and bearing down, however, were felt less frequently than after the earlier doses. (p. 28-9.)

The largest doses were taken by Assmann; on one occasion he took two drachms at once, and on another day two drachms at twice. These large quantities produced head-ache, violent thirst, oppression of the stomach, abdominal pain, and other distressing symptoms, so that Dr. Jörg dissuaded him from taking larger quantities. Dr. Alexander, of Edinburgh, however, whose experiments our author quotes at some length, tried the effects of nitre with much greater boldness, not to say rashness. He found that nitre is less active when it has been some time dissolved in water; when it was in this state he could take six, eight, or twelve drachms within 24 hours, without inconvenience, the only effect being an increased secretion of urine. But when he took an ounce dissolved immediately before swallowing, at the rate of a drachm every ninety minutes, in four ounces of water, the following were the effects. First, a refreshing coolness, then coldness and pain in the stomach, and at last sharp and lancinating pains, not only in the stomach, but through the whole body, which were so violent that for fifteen minutes he could not breathe without feeling the acutest pain at each

inspiration. He afterwards divided an ounce and a half of nitre into eight equal parts, and took one every ninety minutes, immediately after its solution in water; but the pain in the epigastric region and over his whole body was so great, that he was obliged to desist from his experiments. Dr. Jörg then gives at some length a case of poisoning with nitre, related by Alexander; but we will avail ourselves of the brief abstract of the same case given by our great British toxicologist:—"A woman in the second month of pregnancy, immediately after taking a handful of nitre in solution, was attacked with pain in the stomach, swelling of the whole body, and general pains; she then miscarried, and afterwards had the usual symptoms of gastritis and dysentery, united with great giddiness, ringing in the ears, general tremors, and excessive chilliness. She seems to have had a narrow escape, as for three days the discharges by stool were profuse, and composed chiefly of blood and membranous flakes." (Christison on Poisons, p. 162-3.)

From the sum total of these experiments Dr. Jörg concludes, that *nitre is a stimulus to the kidneys, the intestinal canal, and the skin*. Its action upon the kidneys, which is most to be depended on, is shown by its increasing the quantity, and altering the quality, of the urine. It acts upon the alimentary canal from its commencement, and upon the auxiliary organs which open into it, increasing the secretion of saliva, causing dryness of the mouth and the œsophagus, thirst, morbid hunger, and pain in the stomach, (the pain being like that of inflammatory irritation,) a sensation of pressure or cutting in the small intestines, with rumbling, flatulence, and relaxation of the bowels; sometimes there is constipation, when the nitre has acted more especially on the small intestines, the kidneys, or the skin. Its power over the large intestine appears from its so often causing a desire to go to stool, even when this was not followed by actual evacuations. It more rarely affects the skin. When used in moderate doses it has no after-effects, and does not attack other organs. It was only when taken in very large doses that it excited giddiness or pain, or confusion of the head. Nitre, however, has one subordinate effect, which physicians have prized too highly, and have consequently prescribed it in diseases where it was totally out of place. When taken immediately after it has been dissolved in water, it cools the mouth, the œsophagus, and sometimes the stomach, for a few minutes. This primary effect, however, is soon followed by its secondary one, that of warming, namely; and the

greater the former, the more marked is the latter. Thus the more the frequency of the pulse has been diminished by the original refrigeration caused by the medicine, the more is it increased by the subsequent reaction.

From this fact, and from its power of stimulating the skin, the kidneys, and the intestinal canal, Dr. Jörg deduces the conclusion that nitre is not an antiphlogistic remedy, but that it is to be used as a derivative in inflammation of the head, neck, and sometimes of the thoracic cavity. Moreover, as in moderate doses it does not act upon the nerves or the brain, it is well qualified to be a substitute for the mercury which is so frequently given too liberally in the phrenitis of children. In many cases, too, it must be an excellent emmenagogue. In the majority of cases the dose should be from three to five grains twice a day, though there are occasions when eight, ten, or more, should be given.

Cherry-Laurel Water.—The medicine used in Dr. Jörg's experiments was prepared in the following manner, in conformity with the prescription of the Saxon Pharmacopœia, (Dresden, 1820, p. 168.)

Take of fresh cherry-laurel leaves cut into pieces, lbj.; Alcohol, ℥j.; Common water, lb. vj. After mixing, three pounds are to be distilled over.

The doses varied from three to fifty drops; though one experimenter, Heisterbergk by name, who appears throughout as the Mithridates of the club, took, on one occasion, 112 drops, with but little effect, save that of lowering his pulse about twelve beats in a minute.

Before recapitulating the effects of cherry-laurel water, Dr. Jörg observes that many drugs are tasted or smelt long after having been swallowed; while this substance, the moment it reaches the parietes of the stomach, seems decomposed, and therefore deprived both of its taste and odour. He remarks likewise that no drug throws more difficulty in the way of the experimenter than this one; for as it begins by attacking the head, it diminishes his capability of judging of his own sensations.

The cherry-laurel water was found to cause heaviness, with oppressive and stabbing pains in the brain, especially in its anterior part, in the region of the nerves of the eye, but particularly confusion of the head, with diminished sensibility of the whole body, slowness of the pulse, weariness and inclination to sleep, sleep itself, relaxation of the whole body, but especially of the thighs, disinclination to work; and, secondarily, irritation, itching, and tickling in the larynx, as in the com-

mencement of inflammation of this part, frequent slight coughing, and increased secretion of a tough mucus in the trachea. It would appear, too, that the slowness of the pulse is more or less associated with the affections of the head.

This remedy acts as an excitant upon the brain; and, therefore, the retarding of the circulation and the diminution of the sensibility, for which physicians most frequently prescribe it, are purchased by an exaltation (though but a transient one) of nervous and cerebral life (*des Nerven- und Gehirnlbens*). Hence this medicine is ill adapted for patients suffering under inflammation or congestion of the brain, but will be advantageous in inflammation of the abdominal and genital organs, or in increased sensibility without inflammation. It must be injurious in pneumonia, as it has a tendency to inflame parts connected with the lungs, namely, the larynx and trachea, exciting cough and dryness of the mouth.

It will be particularly beneficial in diseases of the female genitals attended with increased sensibility, whether they bear an inflammatory character or not: on the other hand, it might do much harm in the first six days of scarlet fever, and in puerperal fever with a tendency of the *materia lactea** (*Milchstoff*) to the head, as in either case it might favour the metastasis to the brain.

Dr. Jörg asks whether the cherry-laurel water, from the prussic acid which it contains, may not be additionally useful in the inflammations in which he has recommended it, by rendering the blood more venous, and, therefore, less plastic, and thus, more or less, preventing the adhesion of the inflamed parts by exudation. This effect would ward off great evils in inflammation of the intestines, peritoneum, urinary bladder, and uterus.

No one, he says, who is accurately acquainted with its medicinal properties, will believe that this remedy can have been of avail in obstructions of the abdomen, in what is called an *atrabilious* state, in hemorrhoidal affections, in obstructions of the glands, in induration or carcinoma of the uterus. In these and similar diseases it can have done no real service, unless we reckon as such its depressing the sensibility of the nerves. Nor must it be used in the various spasms for which it is prescribed by physicians, without the greatest caution. Those spasms or convulsions which depend on irritation of the brain, or arise from

repletion of its vessels, and the general or partial pressure which the central organ of the nervous system thereby suffers, cannot be quieted by this remedy.

As it acts upon the healthy in very different doses, the physician must select those for the sick with the greatest care; but they will probably range from three to fifteen drops, two, three, or four times in the twenty-four hours, though in some cases they must be gradually increased. We must recollect, too, that it soon loses its strength by standing, and by frequent opening of the phials in which it is contained.

Bitter Almond Water.—The medicine used in the experiments was prepared according to the Saxon Pharmacopoeia, by mixing one pound of bitter almonds with an ounce of alcohol, and six pounds of water, and distilling over three pounds.

It appeared, from the majority of the experiments, that although this remedy tasted and smelled more strongly of bitter almonds than the cherry-laurel water, it is weaker. Its effects, too, are of the same kind, and it may, therefore, be very well dispensed with.

Vauquelin's Prussic Acid.—The doses taken by the society varied from half a drop to three drops in twenty-four hours. They also destroyed four young magpies, two young cats, two young rabbits, a guinea-pig, and two frogs, with this drug. Four drops were sufficient to kill a half-grown male cat in three or four minutes.

It appeared, from examination after death, that, when prussic acid has been taken, the blood puts on the venous character, and is accumulated in the veins and the right half of the heart. Dr. Jörg also found this effect gradually take place in a frog poisoned with five drops, and placed under the microscope.

He concludes, from his experiments on men and animals, that prussic acid acts not only with the utmost rapidity, but with the utmost violence as a stimulus to the brain and nervous system, but more rapidly and violently on the cerebral than on the ganglionic nerves. This excitement is sooner or later followed by a diminution of nervous and cerebral life, or by death itself. When death does not soon take place, an inflammatory irritation of the trachea, and especially of the larynx, is produced. It also paralyses the lungs, thus causing those dreadful sensations which arise from the non-oxygenation of the blood. Hence the advantage of taking the patient into the open air.

Dr. Jörg would wish to see this remedy expunged from the *materia medica*, on account of its dangerous strength; and we agree with him. The cherry-laurel water

* By this phrase Dr. Jörg must mean the tendency to the head of that portion of the blood which, in a healthy woman, should secrete the milk.

is far preferable. If Vauquelin's prussic acid is to be used, the dose should not exceed half a drop, or a drop, every four, six, or eight hours.

He remarks that, in all cases where the primary and secondary effects of a remedy are almost diametrically opposite, much depends on the magnitude of the doses and of the intervals between them: thus when some abdominal organ is violently inflamed, if it is desired to make the pulse slower, and the blood more venous, much larger doses of prussic acid will be required than if it is desired in a nervous disease to change the tone of the nerves.

Ittner's Prussic Acid.—The doses taken of this medicine varied from half a drop to three drops. Dr. Jörg himself took none; for Vauquelin's acid had acted so strongly upon his sensorium and common sensation, that he foresaw that Ittner's would have deprived him of his tact, both in the literal and figurative sense of the word. He found, however, from his experiments on men and animals, that this solution of prussic acid is rather stronger than the former one, and, therefore, still less deserves a place in the pharmacopœia. If ever prescribed, the dose should be from the fourth of a drop to a drop, every four, six, or eight hours.

The root of Valerian.—The society first tried an infusion; the proportions being generally from ʒij.—ʒj. to a pound of water, and the time of maceration a quarter of an hour. The dose was usually a quarter, but sometimes one half, of this infusion. Sometimes it was taken in a more concentrated form, as for instance, ʒij. of valerian infused in ʒiiss. of water.

When taken in the form of powder, the doses varied from half a drachm to two drachms and a half.

The results of the experiments show that valerian is a stimulus to the brain and the organs of digestion: when used in infusion it acts more on the head, when in powder, more on the abdomen and its organs. Dr. Jörg blames the manuals of materia medica for recommending valerian in hypochondriacal and hysterical cases. It is to be used, he says, in cases of debility, but not where there is any congestion of blood in the brain or the abdomen. The range of doses is to be from half a drachm to two drachms.

The root of Serpentina.—An infusion was first tried; the quantity infused varying from a scruple to two drachms. The society afterwards took the powder in doses varying from gr. xv. to ʒiss.

Dr. Jörg found that serpentina is a stimulus to the intestinal canal and its auxiliary organs, and that it favours con-

gestion in the abdominal viscera; but with this peculiarity, that it does not promote mucous or glandular secretions, but rather the development of air in the intestines. Sometimes it acts as a stimulus to the brain, and causes congestion in that organ; sometimes it accelerates the circulation; and occasionally it stimulates the urinary, and, probably, also the genital organs. When infused, it acts more on the head and less on the abdomen, and *vice versâ* when in powder. When taken in small doses its effects last from 8 to 12 hours; when in large, from 18 to 20. Hence it should not be given oftener than twice in twenty-four hours; and sometimes once is enough. The dose should be from a scruple to a drachm, whether infused or in powder.

Dr. Jörg thinks it probable that serpentina, from its power of checking the mucous and fluid secretions of the intestinal canal, will be found particularly useful in chronic diarrhœa without any trace of inflammation, and in diarrhœa arising from colliquation. After observing that from its power of extricating air in the intestines, it would probably be hurtful when meteorismus is already present, he concludes with a very proper saving clause: "but this last point must be learned from experience at the sick-bed." (p. 181.)

The flowers of Arnica.—This remedy was taken in infusion. The dose of the flowers varying from 1½ to 45 grains, the smallest doses being taken by Mrs. Ch. and Miss L.; the largest by Heisterbergk. It was afterwards tried in the following manner. A drachm of the flowers was infused in six ounces of water, and a table-spoonful of the filtered infusion taken every two or three hours; this being the quantity and the intervals, says Dr. Jörg, in which most writers recommend this remedy, when it is to be taken in moderate doses.

He concludes from the experiments, that arnica flowers irritate and inflame the alimentary canal throughout its whole extent; the œsophagus, however, the stomach, and the small intestines, more than the large ones; that they act more upon the muscular fibres of the intestinal canal than on its vessels, and therefore promote contraction in the several divisions of the intestines, far more than secretion or absorption. They must also act upon the urinary system, and increase the secretion of urine either in quality or quantity; nor do the brain, the circulation, the skin, the lungs, or the trachea, escape the influence of this stimulus.

The action of arnica flowers lasts much longer than is commonly supposed, as it extends to from 24 to 36 hours.

Almost any book of materia medica will serve to show that arnica flowers are pre-

scribed in doses too large, and too closely following each other.

If the patient is very irritable, a spoonful of fluid impregnated with the virtues of one or two grains of the flowers will suffice; to less sensitive persons we may give half an ounce of fluid, in which from three to five grains have been infused.

Dr. Jörg having found that arnica flowers are an external irritant, recommends them or their infusion as a mild rubefacient, and the infusion as an application to foul, malignant ulcers, which threaten sphacelus or induration.

The root of Arnica.—This drug was first tried in the form of a tincture prepared with one part of the root to six of alcohol. The doses were pushed as high as 84 drops, but the effects were very slight. It is rather to be considered a spirituous bitter, than as possessing the peculiar powers of arnica. The club then took the infusion of the root; the quantity infused varying from gr. iiss. to 3j.

Dr. Jörg states the following differences between the infusion of the root and the infusion of the flowers of arnica. 1. The former being less acrid is a lesser stimulus to the cavity of the mouth, to the œsophagus, stomach, and small intestines. 2. Its slower and milder action upon the intestinal canal affects the muscles rather than the internal mucous membrane, and therefore promotes contraction, rather than any other function. 3. In persons whose digestive organs are not very irritable, it apparently acts more upon the brain than the infusion of the flowers.

Dr. Jörg concludes by remarking that arnica has long been celebrated for its power of discussing indurated parts, and promoting the absorption of fluid effused in the brain, but that this power was not shown among the experimenters, as there was nothing to be discussed or absorbed. Still, he says, the experiments clearly prove that arnica has this power; for, whatever increases the activity of the alimentary canal, exalts the function of the lymphatics, and causes derivation from the brain. Hence arnica is similar in its effects to calomel, with the difference that the former calls forth an inflammatory diathesis, while the latter rather promotes a scorbutic relaxation.

[To be continued.]

CÆSAREAN OPERATION.

(From a Correspondent.)

This operation was performed, on the 15th inst., by Mr. Whitehead, of Manchester, in consequence of extreme deformity of the pelvis. Premature labour

had been induced in four previous pregnancies about the end of the fourth month. The usual means were employed in the present instance until the end of the seventh month, but without the desired effect. The child and placenta were extracted without any difficulty in about two minutes after the first incision was made, and the whole operation completed in the course of a quarter of an hour from the commencement. The loss of blood amounted to about ten ounces. The suffering, according to the patient's own account, was not greater than that occasioned by one or two strong labour pains. The mother and child, up to the present time (the sixteenth day after the operation), are doing well.

Owing to circumstances which it is needless to mention a detailed account cannot be furnished at present, but will be hereafter.

August 31st, 1840.

ON

SECONDARY DEPOTS OF MATTER.

HOW ARE PURULENT DEPOSITIONS OF MATTER FORMED AFTER INJURIES AND OPERATIONS IN PARTS REMOTE FROM THE ORIGINAL SEAT OF INJURY?

Illustrated by numerous Cases, &c.

By JOHN CHARLES HALL, M.D. F.L.S.

"Utendum est ætate; cito pede præterit ætas."
OVID.

WILLIAM T——N, ætat. 35, a man of very intemperate habits, was placed under the care of a surgeon, having, four hours previously, received a kick from a horse on the posterior part of the head. There was a wound, two inches in length, which separated the scalp from the cranium, the bone being denuded of its periosteum to the extent of a crown-piece. There was no appearance of fracture or depression. He stated that he was stunned by the blow for some time, but had not been sick. When first seen he was stupid and sleepy; pulse 100, strong and full.

Eighteen ounces of blood were taken away from the arm, and a purgative, composed of calomel and colocynth, administered.

6th, (noon).—Has passed a tolerably good night; not at all drowsy. Complains of a little pain in the head; bowels

have acted freely; tongue slightly furred, but moist; pulse hard, and 84; countenance flushed and anxious; skin hard and dry.

9, P.M.—Pain in the head increased. There is a slight puffiness about the edges of the wound; pulse 86, hard and wiry; bled again to ten ounces.

7th.—The blood extracted yesterday was highly inflamed. Has passed a quiet night; no pain in the head; still drowsy and inclined to sleep; pulse 84, more quiet; tongue moist; *the adhesions were broken up, and a considerable quantity of serum escaped.* Apply a poultice to the wound.

15th.—No particular change since our last report. Is now going on well; wound nearly healed. Wants to go home; and says there is nothing the matter with him.

16th.—No change.

17th.—Pain in the head to-day, relieved by purgatives.

23d.—Appears to be going on well; the bone, however, is denuded and rough.

26th.—Up to this day he remained quite well, and was allowed to walk about his room. Violent pain in the head now came on; singing in the ears; with repeated rigors alternating with the most violent perspirations.

10, A.M.—Severe pain in the head; face much flushed; skin hot; tongue loaded; pulse 120, full and sharp. Bled to twelve ounces.

3, P.M.—Pain in the head better; pulse 90; blood taken away in the morning buffed. An incision was made down to the bone, which was exposed by the accident; it felt rough, but the periosteum was spreading over it: a saline mixture was ordered. In the evening he had another rigor; pulse 120, strong but compressible; blood buffed and cupped; a blister to the head. The medicine to be omitted.

R Hydrarg. Chloridi, gr. ii. quâque 4ta. horâ sumend.

27th.—Has passed a very restless night. Had two rigors; one at evening, and the other in the morning: pain in the head; pulse 132; cough; no râle, no tenderness of the abdomen; tongue white and loaded; skin hot and dry; slight delirium.

2 o'clock, P.M.—The trephine was applied over the original seat of injury to seek for pus, but none was found; the dura mater was perfectly sound, and not

one drop of matter escaped; the wound was closed by suture. Vespere, pulse 72, quiet; no pain in the head; or, to use the poor fellow's own words, "none worth speaking of."

28th.—Has been rather restless during the night. Had a rigor at midnight, another at twelve to-day; slight pain in the head; great intolerance of light and sound; singing in the ears; wound looks rather better; pulse 120, strong and sharp; tongue moist but loaded, particularly at the back part. Bled to eight ounces. Two grains of calomel every eight hours.

29th.—Blood buffed; pain in the head said to be relieved (?) by the bleeding; two rigors at the same time as yesterday: the wound does not look so well to-day; he is less irritable; pulse 120. Continue the calomel.

30th.—Has had a little sleep at intervals during the night; two more rigors; great sickness; pain, with some fullness, in the right hypochondriac and epigastric region, which is increased by pressure; breathing hurried; the wound appears worse; no pain in the head, and no cough; pulse 120; fæces black, foetid, and particularly offensive; countenance sallow. Omit the calomel; a blister to the epigastrium. Small doses of creosote, to allay the vomiting; and a few grains of sesqui-carbonate of ammonia, with spir. æth. nit. and mint-water, every four hours.

1st.—Two more rigors; no sleep; pain in the loins; pulse 108; urine scanty and high coloured; tongue loaded; skin hot and dry; complains of pain between the shoulders. Beef-tea; two grains of calomel at bedtime.

2nd.—Has passed a very restless night; had another rigor this morning; breathing occasionally difficult; evidently becoming weaker; the skin, also, is becoming daily more and more yellow; wound unhealthy and languid; pulse 116.

7th.—The changes that daily took place up to this morning, when he died, require no particular notice; he became weaker and weaker, the symptoms of jaundice gradually increasing.

Post-mortem examination — Head. Upon removing the bone, the dura mater was found to be perfectly free from disease; the longitudinal sinus, over which the trephine had been applied, was healthy, as were all the other sinuses, evincing no trace of previous inflamma-

tion. The brain was also perfectly free from disease, nor was there any effusion into the ventricles.

The lungs were congested, and of a dark red colour, with one or two depôts upon each lobe about the size of peas. The liver was much enlarged, the right lobe reaching down below the crest of the ilium. There was a large purulent deposit at the anterior margin, extending for some distance along the inferior concave surface of this lobe; there were also two or three smaller ones on the superior aspect. On cutting through the surface of this lobe, other deposits of different sizes were discovered, being hollow in the centre, and filled with pus; there was also a very considerable abscess in the left lobe. The right shoulder-joint was also affected, and contained a considerable quantity of pus.

We cannot carefully read over this very important and very interesting case without remarking, that after a comparatively slight injury of the head, a distant organ became secondarily affected, abscesses forming in the liver. A more minute examination will also point out how clearly the condition of the wound proclaimed the disordered condition of the system. Cases of this kind are far from uncommon; and, speaking of them, Mr. Abernethy remarks, "that these circumstances appear to me to be stated rather as occasional, than as occurrences which are common, and naturally to be looked for and expected; and I therefore think myself warranted in supposing that they have not made a sufficient impression on the minds of surgeons in this country at least." Dr. Cheston, in his valuable pathological observations, has recorded several cases of this nature, and we may also add that they have been familiar to surgeons for many years. In the works of Galen we find passages proving him to have been acquainted with them. Bertrandi (*Mémoires de l'Académie de Chirurgie*) mentions several instances in which secondary depôts took place in the liver after injuries of the head.

The subject of secondary depositions of matter taking place, as in the case now before us, in organs far distant from the original seat of the injury, involved, as it is, in mystery, is, nevertheless, one of considerable importance, and well worthy of our most careful and attentive consideration. That this is

far from being uncommon, after injuries and operations, is a fact that cannot be doubted for a moment. A man is brought into the hands of the surgeon, having received a blow upon the back part of his head; he recovers from the injury; all pain in the head is gone; he walks about the room, and expresses a wish to return home; suddenly he is seized with pain in the head, succeeded by rigors; there is pain in the right hypochondriac region; the countenance becomes yellow, the symptoms of jaundice daily increase, the man dies, and the lungs, liver, and one or two joints, are found to contain depôts of purulent matter. The question naturally arising is, how came they there? In the greater number of cases they succeed to injuries and operations, frequently after a blow upon the head. Now as they appear, in the majority of instances after accidents, in men who, before the infliction of the injury, were in a perfect state of health, we cannot for a moment suppose that they existed previous to the accident. Such a supposition is not consonant with reason. We cannot suppose such an extensive disease to have existed without disordering the health—without proclaiming its presence by a series of the most alarming symptoms. The disease, therefore, must be created after the accident; the fracture of the bone, or the wound of the scalp covering it, or the inflammatory action produced in one, or both, must have contributed to its production; in what way, however, must form the ground-work of our present investigation.

We define suppuration to be a peculiar process, by which a fluid called pus is formed in the substance or from the surface of parts of the body. The texture in which suppuration seems to be most readily produced by a certain degree of inflammatory action is mucous membrane, whether this lines excretory ducts or canals, or covers the inner surfaces of the respiratory or urinary organs.

Professor Carswell makes a distinction between the process of suppuration, considered as a vital act, and the mere presence of pus as a product of that process. "For if," says he, "pus be found in an organ in which neither the physical nor physiological characters of inflammation are to be detected, either during life or after death, the necessity then of establishing a distinction be-

tween the mere presence of pus and suppuration must be obvious." Great violence done to parts is one of the principal exciting causes of suppuration; but simple violence does not always occasion it; "for," remarks John Hunter, "the violence must be followed by something that prevents the cure in a more simple way—something that prevents the restoration of the structure, and the continuance of the animal functions of the part. The parts must be kept long enough in that state into which they were put by the violence, or what is somewhat similar to this, the violence must be attended with death in a part, as in many bruises, all mortifications, and all sloughs in consequence of the application of caustic which, when the dead parts separate, leave internal surfaces exposed. "And," continues Professor Carswell, in his *Illustrations of the Elementary Forms of Disease*, "formed by a process similar to that of secretion, the chemical composition of pus must vary, not only from the nature of the tissue from which it is derived, but likewise under the influence of various morbid conditions which are known to modify the products of secretions in general." "True pus," says Sir A. Cooper, "has certain properties which, when taken singly, may belong to all other secretions, but which conjointly form the true characteristics of this fluid, viz., globules swimming in a fluid which is coagulable by a solution of the hydrochlorate of ammonia. Pus also contains a very considerable portion of fibrine: thus we find fibrine, serum, and globules, entering into its formation. If I were to hazard a theory upon this subject, I should say that pus was composed of the constituent parts of the blood, slightly changed in their nature by inflammation" (*Lectures on Surgery*, page 121).

In addition to what we have already stated, we learn also that the secretion of pus is frequently suspended by disease: thus in fevers the peculiar state of the constitution induced by them has such an effect upon the local affection that a sore will appear to be almost dried up, at any rate its discharge will be very considerably lessened, but as soon as the febrile symptoms subside, pus is again secreted in as large a quantity as ever. The nature of the secretion is also altered by disease, and the appearance of the wound will announce the com-

mencement of constitutional irritation, even before any other symptom is present: the production of true pus ceases when disease attacks either the constitution or the sore; it changes its character, and becomes offensive, thin, and more transparent, containing a greater proportion of the extraneous particles of the blood.

The nature of the fluid most unquestionably varies; varies not only in its nature, but also in its effects. I know of no chemical difference between the pus upon the surface of a common ulcer and that of small-pox: that there is a difference I presume no one will take upon himself to doubt; but we only are aware of such difference by the nature of the effects produced in each particular form in which suppuration takes place upon the constitution. Doubtless, whatever tends to produce an alteration in the general state of the system influences more or less the nature of this fluid; at any rate renders the human body more susceptible of its influence—more liable to be acted upon by it. If, then, we can discover, by chemical analysis, no essential difference in the constituent parts of this fluid, I am inclined to think that peculiarities in the constitution, or in the nature of the parts in which it is secreted, will account for the varieties we observe in the nature of this fluid. For my own part I have again and again examined gonorrhœal discharges with a microscope, and at the same time pus effused from an ulcer, without being able to detect any difference. Long ago, however, Mr. Howship informed us that "he could not perceive any essential difference between such discharge and the pus collected from an ulcer." Now every surgeon is well aware that irritation, chemical or mechanical, on the surfaces of the female pudenda, or urethra of the male, which are the seats of gonorrhœa, may excite it. Contusion and forcible distension of the female pudenda will also bring on a discharge. When female children of tender years have been violated we have always more or less discharge; the introduction of a bougie; the injection of any irritating fluid; connection with women during the period of the menses, or who have a leucorrhœal discharge, will produce more or less inflammation of the urethra, and an acrid secretion that any surgeon would at once pronounce to

be gonorrhœa—which is, in fact, a disease of a highly inflammatory character, ending in the secretion and discharge of muco-purulent matter, varying, of course, in different constitutions, and influenced more or less by the general state of the system; capable of being produced in a variety of ways, always, however, commencing with an attack of inflammation, and ending in the discharge of pus—of matter which no one can distinguish from that which is secreted from an ulcer. There is nothing, then, in the nature of this fluid to induce us to suppose that the disease is specific, or that it is even a form of the venereal disease.

We have been induced to dwell longer on the nature of this fluid than we had intended, but not at greater length than its importance warrants. We have yet, however, to direct our attention to the most difficult part of our investigation, viz. the manner in which collections of matter are formed in the liver, and other internal organs, after injuries of the head, and other parts of the body.

We ventured to suggest, at the commencement of this paper, that the proof of the enjoyment of good health before the reception of a blow upon the head, was presumptive evidence of the previous non-existence of the purulent deposits found in the liver after such injuries. In the valuable lectures (now publishing in this journal) of Mr. Phillips, on Surgery, this subject is discussed with considerable ability. “It is difficult,” says he, “to explain visceral abscesses as a consequence of surgical operations, though operations are often performed on persons whose general health is good, and in whom we cannot admit that visceral lesions, so grave as those we meet with, can have existed before the injury or operation. Still, as on the one hand observation shows that a great many organic lesions may exist in a latent state, and as, on the other hand, visceral abscesses, consequences of wounds, present, by their multiplicity, their seat, and other circumstances, a great analogy with suppurating tubercles, many persons have maintained that these abscesses were no other than the result of the development of pre-existing tubercles. If this theory ought not to be adopted as a general rule, neither should it be repulsed in all cases. Our opinion is that it should not be admitted as a general rule; unques-

tionably, in most cases, around these abscesses phlegmonous inflammation may be detected without tubercles, or tubercular infiltration.”

This opinion is doubtless entitled to great respect, admitting, however, of much that can be urged against as well in favour of its adoption. It appears clear, that to the production of such secondary depôts two things are necessary: first, some exciting cause, as a wound of the scalp or an injury of the cranium; second, a peculiar state of the constitution, either existing previous to the receipt of the injury, or produced by some change which takes place in the part itself; for doubtless the general state of the system contributes in no inconsiderable degree to the production of certain specific diseases. Thus, a child may escape at one period of the year from rubeola, or any other disease to which children are liable, but at another time, from the strength being exhausted, from a cachetic state of the body, no resistance can be offered by the constitution, and the disease comes on.

Admitting then, on the one hand, the necessity of an immediate local or exciting cause, which we discover in the wound or blow upon the head, we direct our attention to that state of the system that predisposes to it; to that peculiar condition of the circumstances by which the patient is surrounded: it appears clear, we think, that certain conditions of the atmosphere, or of particular districts—in short, those which contribute to give rise to those fearful maladies, hospital gangrene and typhus fever—tend to produce inflammation of the veins; for I have never seen a case of phlebitis in which typhoid symptoms were not present. We will now enter more fully into the examination of phlebitis, and consider in review what has been written on the subject of inflammation of the veins, and the origin of depôts of purulent matter in certain viscera, at the same time offering such remarks as the cases we have seen, and the post-mortem examinations we have attended, suggest. We will therefore examine, in the first place, the causes of phlebitis; secondly, the symptoms that are present; and lastly, the manner in which the visceral abscesses before alluded to are supposed to be formed, after injuries and operations.

1st. The causes of phlebitis.

In the *Cyclopædia of Practical Medicine* there is a very interesting paper by Dr. Robert Lee, F.R.S., on diseases of the veins. He there states that he was informed by Sir A. Cooper that he once met with a tumor upon the saphena major vein. This tumor was laid open or removed, and inflammation of the vein soon succeeded, and destroyed life. A lady having a varicose enlargement of the vena saphena, Sir Astley cut it out, compressing the vein below, and requested her to keep quiet. Three or four days afterwards she was labouring under high constitutional irritation, the leg having an erysipelatous appearance; the great saphena vein became inflamed as high as the groin, and the patient died. Mr. Oldknow relates the case of a man who died after the application of a ligature to a varicose saphena vein. A woman was operated upon by Sir E. Home for femoral aneurism; by accident the vein was wounded, and the woman died. "Mr. Abernethy proposed to cut the saphena vein in cases of varicose veins of the leg; proposed, I say, for I believe he never did it; but, continued the learned lecturer, "when I was assistant-surgeon to this hospital, I cut this vein in a poor fellow's leg, and he died of venous inflammation; but still the operation had been performed before with perfect safety." (Notes of Sir B. C. Brodie's Clinical Lectures.)

Some years ago it was a very common practice to pass a ligature round the saphena vein for varicose veins of the leg, and for some time no mischief followed. But upon Sir A. Cooper observing several of his patients die in succession after the performance of this operation, he called the attention of the profession to it, and it was abandoned; for it was folly to suggest that as a remedy which proved far worse than the disease.

Inflammation of the veins appears to arise therefore, for the most part, from direct injury of them; from small punctures, as in bleeding. Mr. Abernethy believed that moving the arm soon after bleeding produced the disease. Dr. J. Thompson, of Edinburgh, thinks the state of the lancet as to sharpness has a considerable share in producing the morbid effects. A bad lancet may contribute, Mr. Abernethy thinks, to produce the disease; yet this is not sufficient to account for the accident, without supposing a peculiar irritability of the

constitution to be present, and this opinion is borne out by Sir B. C. Brodie, who remarks, "you bleed three hundred patients, and at length one is attacked with inflammation of the veins, and you are at once accused of having a foul lancet, when perhaps it was new, and used only for the first time." Breschet states that punctured wounds, particularly when the instrument is charged with some putrid or irritating matter, are often followed by inflammation of the deep-seated veins, and he attributes the greater frequency of inflammation of the veins of the arm in the present day, to the fact of bleeding with the lancet used for vaccination. We may also mention wounds received in dissection as an exciting cause of inflammation of the veins, and it is reported that Dr. Serrin died from the prick of a pin, which had been used for dressing a blister, and which wound, slight as it was, induced fatal inflammation of the vein. We must also take into consideration the state of our patient at the time he is bled. We must remember that there is more or less of excitement; generally more or less a tendency in the animal body to take on an inflammatory action at the time the operation is performed.

2d. The symptoms of phlebitis.

We are indebted to Mr. Arnott for some very clear explanations of the phenomena attendant upon this disease. The symptoms, he says, manifest themselves in from two to twelve days: "great restlessness and anxiety, depression of spirits, and prostration of strength; sense of weight at the præcordia; frequent sighing, or rather moaning. The common symptoms of fever are present; the pulse is rapid, reaching 130 to 140 in a minute, but is in other respects extremely variable. Under symptoms of increasing debility, and at a time when the local symptoms appear to be subsiding, secondary inflammations of a violent character, and quickly terminating in effusions of pus or lymph, take place in situations remote from the original injury; the cellular substance, the joints, and the eye, have been affected. Death is always preceded by symptoms of extreme exhaustion, such as those of a rapid feeble pulse; dry, brown, or black tongue; teeth and lips covered with sordes; haggard countenance; low delirium."

M. Cruveilhier, whose writings we shall directly more particularly examine, informs us that phlebitis of the

bones is one of the most frequent causes of abscesses found in the liver and other viscera. In 1814, he examined the medullary membrane of the long bones of such as had died in the Hôtel-Dieu with abscesses of the viscera, and low typhoid symptoms. There was suppuration in by far the greater number of those of the medullary membrane, sometimes extending throughout the whole length of the bone. Operations upon the bones are extremely likely to produce inflammation of the veins, according to this author; and he refers the constitutional disturbance to a miasmatic state of the system, the whole mass of fluids being infected: and he continues, "however extensive the phlebitis may be, if the pus does not enter the circulation, no accident follows from it; but as soon as the impediment formed by the coagula is removed, atonic adynamic fever, preceded by intense shivering, takes place, and is speedily followed by death."

It appears, then, that the veins are liable to all the morbid changes which are common to the soft parts in general, and that the membrane by which they are lined is peculiarly susceptible of inflammation. This inflammation may be general or local; it may be confined to the vein where the injury was first received; it may spread along the lining membrane to the principal venous trunk; and, in some instances, to the membrane lining the cavity of the heart. Sometimes this inflammation ends in the pouring out of coagulating lymph, by which the vein becomes obliterated; becomes a mere knotty cord. This frequently occurs in horses; in fact, the first case of phlebitis I ever saw was in the jugular vein of a horse of my own, which ended in the loss of the vessel on that part of the neck. When this inflammation is not very acute, it differs little from attacks of a similar nature in any other part of the body. "When," says Mr. Cooper, of University College Hospital, "the secretion of pus is in consequence of inflammation of the membranes lining a vein, the pus is either mixed with the circulating blood, or the inflammation having produced adhesion of the sides of the vessel, at certain intervals boundaries are formed to the collections of the pus, which in this manner form a chain of abscesses in the course of the vessel."

The appearances, then, will vary in our examinations after death, depending

as they do upon the length of time the disease has existed. 1st, It may destroy life in five or six days, before pus has formed, although in many cases it is thrown out much sooner. The inner covering then is red and vascular. 2dly, We may have the vein full of coagulated lymph. 3dly, Pus may have been formed in considerable quantities. Now all these effects may be local or general; may be confined to the particular vein injured, or extend along the venous trunks. 4th, We find dépôts of matter in the lungs, liver, joints, in parts far distant from the original seat of injury.

3d. How such secondary dépôts are formed?

We have endeavoured to divide inflammation of the veins into two stages; to prove that the formation of adherent coagulum is the first, and of pus the second period of this disease. The investigations of surgeons also prove to us that the conversion of the first into the second stage of the malady, is frequently produced by irritating parts in a state of active inflammation, by endeavouring at short intervals to extract dead bone, balls, or other foreign bodies; by cramming up an inflamed wound, as in the operation for fistula *in ano*, after the fashion of a portion of the French school; the frequent examination of wounds; the breaking down of newly formed adhesions, by the introduction of a probe or finger. I have twice seen fatal results brought on by this meddlesome surgery, by a system worthy the strongest censure. In his Surgical Dictionary, Mr. Cooper has at great length examined the subject we are endeavouring to discuss; and he reminds us of the important fact that the first effect of every phlebitis is the coagulation of the blood, which becomes adherent to the inner coat of the vessel; such coagulations take place both in spontaneous and traumatic inflammation of the veins. In consequence of the interruption to the current of the blood in the inflamed vein, it becomes stagnant, and effusion of serum takes place in the surrounding parts, unless the other veins are capable of carrying on the circulation. With respect to the local changes attending the suppuration of the veins, the first is the deposition of pus, and M. Cruveilhier observes that this takes place "not between the vein and the clot, but in the very centre of the latter. At first it has the appearance of wine lees, and then

it becomes white and opaque. This presence of pus in the centre of clots of blood has led to the idea that these clots are directly organized, and capable both of inflammation and suppuration, in the same manner as it is admitted that the pus or serum, which in pleuritic effusion is circumscribed on every side by a recently formed false membrane, is the product of an exhalation from this membrane itself." But it seems, contends Mr. Cooper, more rational to suppose that the coagulum in phlebitis, and the false membrane in pleurisies, serve, in some measure, as filters, through which the products pass, which are secreted by the internal membrane of the vein, or by the pleura. The presence of pus, then, in the centre of a coagulum, would appear, according to my view, to be a phenomenon of the capillary system.

[To be continued.]

ACCOUNT OF A CASE OF SPONTANEOUS RUPTURE OF THE HEART INTO THE PERI- CARDIAL SAC,

UNDER WHICH LIFE CONTINUED FOR
ABOUT TEN HOURS.

BY WILLIAM STROUD, M.D.

FREDERICK P—, aged 29 years, was formerly a domestic servant, but, having married about six years before his death, and become the father of two children, he left service, and opened shop as a green-grocer. He was a man of irritable temper, and rather acute mind; and, having encountered considerable loss and disappointment in his business, had for a good while been struggling against anxiety and vexation. He had, also, for many years been subject to periodical bleedings from the nose, to the extent of a quart or more at a time, repeated at short intervals. This evacuation, which is common to other members of his family, generally occurred in the month of March, or April, and afforded him great relief; but during the present year did not take place. Owing, as may be supposed, to the want of it, he had been for the last six weeks complaining of a sense of fulness in the head, with lassitude and somnolency, which induced him frequently to lie down in the day time.

On Saturday, April 27, 1839, between

five and six o'clock in the morning, he went out, apparently in good health, to make purchases in Covent Garden Market; but, soon after his return, about half-past eight, was suddenly seized with faintness, vomiting, numbness of the extremities, and temporary insensibility. His countenance became ghastly, his pulse at the wrist imperceptible, and he fell to the ground, as if in a dying state. Under the direction of W. Symes, Esq., of Tavistock Square, who promptly rendered his assistance, he was bled in both arms, and about three pints of blood were drawn with much difficulty, but seemingly with some relief.

Having been laid in bed, he complained of a distressing sense of tightness across the chest, and of weight at the heart, accompanied with sighing, depression, and thirst. He afterwards became very restless, but continued quite sensible, gradually sank, and died without a struggle about half-past six the same evening.

An inspection took place at eleven the next morning, when the following appearances were observed.

General conditions.—The body was that of a stout, very muscular, and well-proportioned young man. Its decumbent surfaces exhibited a deep-coloured cadaveric ecchymosis. The head was not examined. *Thorax.*—The lungs were slightly congested, and rather more mottled than usual with carbonaceous matter of an inky hue; the bronchial glands were sound; the pericardium was distended, and remarkably tense, containing nearly a quart of dark-coloured blood, part of which was imperfectly coagulated; the heart was large, and loaded with fat. Just below the termination of the superior vena cava was a ruptured aperture in the right auricle, large enough to admit the finger, and whence the blood found in the pericardial sac had evidently issued. The walls of this chamber were neither thinner nor softer than usual; and, with the exception of the hole itself, and the superficial layer of fat, the heart and its appendages were free from disease. The left ventricle was rather thicker than common, and its columnæ were large, and very strongly marked. *Abdomen.*—The stomach contained much water, which had been swallowed immediately before death, but, together with the liver, and all the other abdominal organs, was perfectly healthy.

REMARKS.—The rupture of the heart, or one of its great vessels, into the pericardial sac, is usually followed by rapid and almost instantaneous death; and the sudden arrest of the circulation, by the subtraction of a portion of blood necessary to its maintenance, and by the pressure on the heart of the blood thus extravasated, is quite sufficient to account for so terrible a catastrophe. In this, and similar cases, where life has been protracted for some hours, or even days after the fatal rupture, it is reasonable to presume the existence of certain modifying and countervailing circumstances; such as the laceration occurring in the auricles rather than in the ventricles, its being originally small, oblique, or obstructed for a while by coagula, muscular contraction, or the position of adjacent parts; an unusual capacity or dilatability of the pericardium, tending to diminish the compression of the heart; or, the great fullness and vigour of the system, enabling it to sustain the evacuation, &c.

In the case above related several of these circumstances were actually observed. The body was in a plethoric state, increased by the omission of a customary evacuation. This plethora, the result apparently of excessive nutrition, must have operated chiefly on the venous system; and accordingly, the rupture occurred in the right auricle, owing to which the circulation was less rapidly interrupted than if it had taken place in either of the ventricles. The pericardium dilated sufficiently to allow nearly a quart of blood to accumulate in its cavity, but at length became extremely tense, and death was occasioned rather by the forcible compression of the heart, than by the mere evacuation of blood; since the same individual had on several previous occasions lost much more at a time from the nose, not only without injury, but even with manifest relief. The blood discharged into the pericardial sac showed a tendency to separate into its constituent parts, as it would have done out of the body; but, being in contact with living surfaces, of which the vitality was gradually expiring, its coagulation was feeble and imperfect.

The case is further interesting by showing that, in certain constitutions, sanguineous plethora, especially when aided by mental irritation and bodily exercise, may produce rupture of the heart by merely dynamic agency, without the concurrence of structural lesion, or of

any other disease discoverable by the senses. It is scarcely necessary to add that, when such an injury has happened, it is entirely beyond the reach of human aid: and, consequently, that whenever the circumstances which lead to it are observed, the means of prevention should be early and effectively employed.

ACCOUNT OF

A CASE OF ANEURISM,

SUPPOSED TO HAVE OPENED INTO THE PERICARDIUM A CONSIDERABLE TIME BEFORE DEATH,

By THEOPHILUS THOMPSON, M.D.,

Physician to the Northern Dispensary, &c.

On the 21st of July, 1839, I was requested to visit, as a patient of the Northern Dispensary, Richard Tosfield, a blacksmith, of strong muscular frame. I found him lying in bed, with his lips and ears slightly livid, his skin perspiring, and his countenance rather anxious. He complained of pain on the right side of the sternum, increased by full inspiration. The right chest was prominent, especially in the situation of the third, fourth, and fifth ribs, where the sound elicited by percussion was dull, while the natural dullness of the cardiac region to the left of the sternum did not extend so far as usual. The sounds and impulse of the heart were distinctly observable on the right, but imperfectly on the left side of the sternum. The first sound of the heart was accompanied with a rasping noise, rather more abrupt than that commonly produced by valvular disease, and which was most audible at the middle of the prominent part of the right chest, scarcely at all under the right clavicle, and not in any degree near the spine. My friend, Mr. Hensley, of St. James's Street, happening to be with me, also examined the patient, and concurred in opinion that the heart was situated towards the right side. I concluded that the heart was enlarged, and the aorta studded with ossific depositions, but could not satisfy myself whether there was aneurism of that vessel. The pulse corresponded accurately with the contractions of the heart, and, except being a little quickened, presented nothing peculiar. Twelve months previously the patient had been attacked

with pain in the back and side, since which period he had suffered from palpitation, and had occasionally fainted at his work. During the two last months he had been several times visited by Mr. Bird, (the house-surgeon of the Dispensary) who finding irregularity of the pulse most observable in the right wrist, with prominence and pulsation of the right side of the chest, concluded that there was aneurism of the aorta. During the month of June the patient complained of pain in the epigastrium, and of some bronchial symptoms, including a troublesome cough without expectoration. Aperient medicines and digitalis had been administered with so much advantage, that he occasionally walked a mile, but during the last week he became considerably worse. I directed leeches to be applied to the right side of the chest, and digitalis to be continued in small doses; but, at the end of August, Mr. Harwood, of Tonbridge Place, who attended the case during my absence from town, found it necessary to suspend the latter remedy. In the month of September the patient became worse; and, on the 19th, I found him again confined to bed, with great lividity of countenance, and a very weak and rapid pulse. The impulse of the heart was feeble; its sounds were abrupt, but confused and irregular, and he still suffered from cough. The apparent suppression of the heart's impulse, and the weakness of the pulse, now led me to suspect softening. I prescribed a demulcent mixture, with tincture of henbane, and a drop of Scheele's prussic acid, three times a day. Under this treatment his strength, after a few days, improved; his pulse fell to 100, and although not strong was regular, and the expression of his countenance became tranquil and cheerful. The sound produced by percussion was still clearer than natural in the cardiac region on the left side, and perfectly dull over the middle of the right side, but the dullness had considerably extended since the last examination, both to the right and left. He continued better until the 29th of September, when, on getting up to relieve his bowels, he became suddenly worse, stared wildly for a moment, uttered an exclamation, and fell back dead.

The body was examined two days after death, with the assistance of my friend Mr. Hobbs, of Southampton

Row, whose notes, with a view to insure accuracy, I have embodied with my own in the following description of the appearances observed. Mr. Dolton, the present house-surgeon of the Northern Dispensary, also attended the inspection.

The body was muscular and moderately fat; the whole of the left ear and part of the neck were of a remarkably deep leaden hue. The superficial veins were much congested, and when cut bled profusely. On opening the chest a firm substance presented itself in the region of the heart, but occupying twice or thrice the usual space of that organ, and having the appearance of an enlarged and diseased heart with adherent pericardium. On making an incision into this substance, which was tense and unyielding, a dark-coloured coagulum escaped, and at first produced in our minds the impression that one of the cavities of the heart had been opened. It was, however, soon found to be a distinct and spacious sac filled with dark coagulum, and it was not until eight or nine handfuls of this coagulum had been removed that the heart itself was discovered, and sufficiently exposed for examination. It was enlarged, rather flaccid, and pushed backwards and towards the right side. Its surface was thickly studded with wart-like projections of a reddish or mahogany hue, and was connected in some parts by strong bands, in others by soft lymph, to the outer layer of the pericardium, which adhered very firmly to the diaphragm, and was in some places thickened to the extent of four lines. The inner surface of this membrane was rendered scabrous by granulated depositions resembling in colour those on the surface of the heart, but rather paler, and was covered with layers of soft lymph. The pericardial sac contained, at least, a pound and a half of coagulated blood. The aorta near its origin was dilated to more than twice its ordinary size: the inner membrane of this vessel seemed, in some degree, to have lost its natural elasticity, and exhibited a little steatomatous deposit, but no ossification. At the most dilated part of the aorta an opening was discovered, the edges of which were even, as if cut with a knife. This wound was probably made in removing the heart and dilated vessel from the chest; but, at one end of the wound, two or three

inches above the aortic valves, was a somewhat puckered opening, apparently produced by disease. On tracing this aperture, it was found to communicate with a sac, which was at first supposed to be the left auricle, but was soon ascertained to consist of the layer of pericardium investing the vessel. This pouch, which was larger than an orange, was full of dense coagulum, and lined with fibrinous layers. At its outer side, nearly on a level with the aortic valves, was a round smooth aperture, rather more than three-fourths of an inch in diameter, through which the blood appeared to have escaped into the cavity of the pericardium. The arteria innominata and left carotid and subclavian arteries contained some pale coagula; but were of their natural calibre, and free from disease. Both the auricles, but especially the right, were much dilated, as was likewise the right ventricle. The ventricles were soft in structure, and the walls of the left were about an inch thick. The cardiac valves were much attenuated, but not otherwise diseased. There was some effusion into each pleural sac, but especially into the right, and that portion of the left lung which overlapped the pericardium was emphysematous. This latter circumstance probably occasioned, at least in part, the preternaturally clear sound produced by percussion in the left cardiac region.

It seems reasonable to conclude that, in this case, the pericardium had not only been thickened by inflammation at some distant period, but had also been affected with more recent inflammation up to the time of death. The effused blood appears chiefly to have accumulated on the left side of the heart, and to have pushed that organ to the right side, partly in consequence of the connection of vessels, partly owing to adhesions between the heart and pericardium. The indications of great displacement of the heart observed at an early period, and the appearances detected in the post-mortem examination, particularly the roundness and smoothness of the opening into the pericardium, the great distention of that membrane, notwithstanding the increased firmness of its structure, and the evidences which it presented of recent and progressive inflammation, seem favourable to the opinion that the rupture of the aneurism into the cavity of the pericardium had occurred a consi-

derable time before the death of the patient. Pulsation near the prominent part of the chest, and a want of accordance between the pulse of the right and left sides, were observed by Mr. Bird, in June, but were not discoverable at the time of my first visit in July. Hence it may be inferred that the rupture occurred between those periods, although the patient lived till the end of September. To assume that life cannot be prolonged after such an occurrence would be unphilosophical. It is true that in most of the cases on record, especially in those related by Scarpa*, and Morgagni†, the evidence of immediate death is almost conclusive; but Laennec has hinted the possibility of an interval taking place between the rupture and the fatal result, and mentions a case which favours the suggestion. His words are‡:—"Il paraît même que quelquefois la rupture d'un anéurysme dans le péricarde peut n'être pas toujours suivie d'une prompt mort. * * * Je me rappelle avoir vu, il y a quelques années, sur une pièce présentée à la société de la faculté de médecine par M. Marjolin, un anéurysme ouvert dans le péricarde par une ouverture qui paraissait déjà ancienne, et comme fistuleuse."—I have not, however, met with any fuller description of the case cited by Laennec, and am not aware of any instance on record in which the evidence of prolongation of life, after considerable hæmorrhage from rupture into the pericardial sac, is equally strong as in that here reported.

The interest of this case in a diagnostic and practical point of view, and in its reference to some questions of medical jurisprudence, have induced me to propose it to the consideration of my professional brethren, by whom I hope the subject will be still further illustrated.

TREATMENT OF CROUP.

To the Editor of the Medical Gazette.

SIR,

HAVING read two papers on the Treatment of Croup, in your Nos. for July 3d and 17th, I have been induced to

* Treatise on Aneurism, translated by Wishart, p. 81.

† Epist. 26, Nos. 7, 17, 21.

‡ De l'Auscultation Médiate, 1826, vol. 2, p. 714.

send you the following communication on the same subject. Should you deem it worthy of a place in your valuable journal, you will much oblige me by inserting it.—I am, sir,

Your obedient servant,

THOMAS YATE, M.R.C.S.L. L.A.C.

Cranley, Guildford, Surrey,
August 29, 1840.

After attentively studying this disease in its acute form in many instances, as also the post-mortem appearances, I have come to the following conclusions upon the pathology and treatment of the same. The species of croup which Dr. Stokes terms "primary," and to which my paper has reference, is, I believe, pretty well agreed by all to be, an acute inflammation of the mucous membrane of the larynx, trachea, and of the bronchi also; this produces a secretion which almost immediately concretes into a thick firm substance, popularly termed false membrane, and which lines the inner surface of the air passages, to a greater or less extent. There is little reason to doubt that croup is a similar affection to bronchitis; but may not its different effects be accounted for in the following manner? Doubtless there is every reason to believe that the secretion in the first stage of croup is similar to that in the first stage of bronchitis, but the locality of the inflammation in the former produces a most material influence upon it. In croup, a current of dry air is immediately applied to the inflamed surface, and greatly favours the concretion of this already viscid exudation, for after it is perfectly formed, we find a thinner secretion thrown out underneath, favouring its separation and expectoration. This, however, in its turn, quickly concretes from the same cause; and this I consider is the reason why we get so short an interval of relief, even after a copious expectoration, in a very severe case, the spasm which always attends this affection being no way diminished. The above supposition may be easily exemplified by taking several long inspirations with the mouth open; a very unpleasant dryness will soon be experienced over the whole cavity, and particularly about the palate and fauces, but on closing the mouth, and breathing through the nostrils, the moisture soon returns. Now as a patient labouring under croup

breathes almost constantly with the mouth open, the inspiration at the same time being prolonged, we may easily imagine how this circumstance would act upon the upper part of the air-passages themselves, lined by a tenacious secretion. In bronchitis, before the air reaches the seat of the disease, that is to say the smaller bronchi, it becomes warm, and loaded with moisture by its admixture with the air already contained in the lung, but the expectoration of false membrane from the large tubes is by no means uncommon. It may be said, how is it that after death we sometimes find the membrane firmly adhering to the mucous surface beneath? I believe this to be the case only in very severe cases, when the inflammatory action has run so high as to stop the secretion and destroy the organ. I am, therefore, much inclined to favour the opinion, that, in the act of inspiration, the air materially assists the formation of this false membrane. Might not, therefore, the inhalation of warm vapour, if practicable, be likely to produce a good effect? But in many instances, from the extreme restlessness of the patient, and more frequently in consequence of the early age at which the disease makes its appearance, I am well aware we shall be unable to make use of this remedy, although, if proved to be of service, it might in many cases be had recourse to; but merely as an auxiliary, not by any means with the view of putting aside the use of any other remedies hereafter to be mentioned.

We have so many good descriptions of the attack and progress of this disease, that it would be useless in me entering fully upon its well known symptoms. It commonly, however, commences with slight cough, hoarseness, and fever, making their appearance in the evening, and almost entirely disappearing the following day. This state of things may continue for three or four days, attracting little notice, when suddenly the mother is alarmed, a few hours after her child has been in bed, to find it wakes up with all these symptoms greatly aggravated. There is a peculiar shrillness of the voice, as though the larynx and trachea consisted of a metallic tube; at the same time there is a sense of pain and tightness about the organ (although deglutition is not impaired, unless the pharynx be impli-

eated), a whizzing inspiration, as though the air-passages were dry and diminished in calibre, and a short dry croupy cough. In very young children the inflammation seems most frequently to commence in the larynx, and gradually to spread down the trachea to the bronchi. In some cases, however, it appears to attack the bronchi and trachea in the first instance, and subsequently the larynx, seldom extending beyond the glottis; but in children from eight to twelve years of age, the attack is often made upon the pharynx, tonsils, and uvula, producing a quinsy, and even suppuration of the tonsil, as in a case lately under my care of decidedly acute primary croup, no typhoid symptom being present. In these cases the croupy symptoms come on more insidiously, but the pharyngeal inflammation abating, we almost immediately get increased severity of the laryngeal affection, requiring prompt and active treatment.

Our first indication is to combat the inflammation, and put a stop to the morbid secretion; therefore blood should be drawn from the arm or jugular vein, according to circumstances: this should be followed up by the application of leeches on each side of the throat or upper part of the sternum, regulating the number according to the age and strength of the patient. I now have recourse to other antiphlogistic means, for after the free use of the lancet, and one efficient application of leeches, it will seldom be found necessary, if taken in good time, to repeat the remedy, for a state of debility quickly comes on, particularly if there is great obstruction to the breathing, which proves as dangerous as the disease itself, although in many instances I know repeated leeching must be had recourse to. An antimony and ipecacuanha emetic should be immediately administered; and as soon as its operation has ceased, I give a purge of calomel and jalap. I then place the greatest reliance upon the hydrarg. chlorid. continued in the dose of gr. ij. every one, two, or three hours, according to the severity of the symptoms, occasionally using the emetic to assist in throwing off the false membrane. One of our first remedies should be the warm-bath, immersing the patient in the water as far as the middle of the body, not up to the neck; indeed, put-

ting the feet and legs into hot water, will almost always be found of great advantage. A blister should also be applied over the sternum, but not till the inflammatory symptoms and febrile action have been diminished, and the pulse become softer. We must always use the precaution, however, not to apply it over the seat of the disease, but at some distance from the throat; to place a piece of silver paper or thin muslin between it and the skin, and not to let it remain on more than three or four hours, or the chances are ten to one we get a troublesome slough, which will either prove the cause of death or greatly retard convalescence. If these means should not prove successful, and the disease run on to the second stage, there is little hope of recovery, for the powers of the constitution quickly fail, owing to the circulation of venous blood—the functions of the lungs being almost entirely impeded. Here our only remedy is the antim. potassio tart. emetic, to endeavour to get rid of the adventitious membrane, together with stimulants and antispasmodics; for the immediate cause of death is no doubt spasm, and not altogether the mechanical obstruction offered by the false membrane, although it assists, and, as I believe, is partly the cause of the spasm, this being a natural effort for its expulsion, which effort sometimes, but very rarely, proves successful.

Many very able men, after bleeding, place the greatest reliance on calomel alone, giving five or six grains every two or three hours to very young children; others, amongst whom we find Dr. Stokes, of Dublin, prefer tartar emetic alone, but I have my reasons for not placing confidence in either treatment alone, but in both combined. I have seen a child die, who had been extensively leeched, and taken five-grain doses of calomel every two hours; but I have frequently seen two grains of calomel every hour, continued for eight or ten hours, completely cut short a confirmed croup, where only three or four leeches had been previously applied, and an antimony emetic occasionally administered. The practitioner who attempts to cure croup with calomel alone, will often lose his patient from suffocation, before the remedy can take effect, and he who trusts in emetics alone must employ

bleeding to a very dangerous extent, or exhaust his patient's strength by repeated vomitings, which often will end in suffocation at last; for although ant. tart. is a most powerful antiphlogistic, it does not seem to check the secretion, though it greatly promotes its separation and expectoration. Moreover, I generally combine ipecacuanha with it, for after taking antimony two or three times, I have known grain-doses produce no emetic effect upon a child, the "tolerance" being established. The best way to administer the calomel is to rub up two grains with an equal quantity of white sugar, and place it upon the child's tongue, in a dry state, giving it a spoonful of some fluid afterwards.

I am pleased to find Professor Hannay decrying sulphate of copper as a remedy in croup. The case he relates is, in my opinion, as clear a one of poisoning by cupri sulph. as any one can imagine. I hope he will fulfil his promise, and publish the post mortem appearances. This medicine must be worse than useless, its action being tonic, stimulant, and astringent. I should as soon think of giving it, even as an emetic, in croup, as of giving ant. tart. after poisoning by arsenic or corrosive sublimate; therefore I cannot but disagree with Mr. Robbs when he thinks it does not matter whether the emetic be composed of ipecacuanha, antimony, sulphate of copper, or zinc. His plan of giving nauseating doses of ant. tart. has long been recommended by a very high authority, viz. Mr. Porter, of Dublin; but I much prefer full vomiting, as advised by Dr. Stokes and Dr. Cheyne, who has undoubtedly given the profession the best article on this subject, in the *Cyclopædia of Practical Medicine*. I may mention here, that his plan of administering an emetic, and then abstracting blood, is, according to my experience, a most valuable practical fact, rendering it unnecessary to extract large quantities. I must say I never saw occasion to apply twelve leeches to a child only three years of age. Who could be surprised at the result of Dr. Zimmerman's case, where thirty-six leeches were applied within two days? I feel assured it is altogether unnecessary to apply twelve leeches at one time in any case of croup; for where a child exceeds four years, we may readily have recourse to the lancet

with the greatest advantage; and I most certainly would not put more than six or eight leeches on any child under that age. I cannot help disagreeing with Mr. Robbs, also, when he speaks against blisters and the warm-bath, for both are excellent remedies when judiciously used; but 108° is by far too hot a bath to put a child in; 98° is "the warm-bath" for an adult; and I believe it is customary, when we wish to use a bath at a higher degree of temperature, to place the patient first into the water at 96° or 98° , and gradually raise it. 108° would almost scald a child to death. I think 88° , gradually raised to 92° or 94° , will be found in every way sufficient to answer the purpose. The disease which Mr. Robbs terms "spurious croup," evidently depends upon irritation of the brain, as described by Dr. Cheyne.

Almost every writer on this disease differs in opinion; indeed, so little do the plans of treatment agree, that a young practitioner is considerably puzzled which to adopt. It is, however, very satisfactory to know that the judicious use of calomel and tartar emetic, employed at the commencement, will, after bleeding, prove almost universally successful; and indeed, although the first stage may be far advanced, the recoveries will far exceed the number of deaths.

OPERATION FOR STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

THERE are still two important questions before the profession as to the mode of dividing the internal rectus muscle for strabismus — namely, is the knife or the scissors the best instrument to divide the muscle? and is it advisable to employ a straight or a slightly curved grooved director to raise the muscle from the globe for the purpose of facilitating the division of the muscle?

The objections to the use of the straight or slightly curved director are the same under all circumstances, namely, the pain given to the patient during the act of passing the director beneath the muscle, which is always in proportion to the smallness and the depth of the eye, with respect to the brow and cheek, and

the difficulty caused to the surgeon by the patient's resistance from the continued pain during the division of the muscle, or search after uncut fibres. Therefore it needs only to speak of the scissors and knife, as employed without a director.

To the use merely of the scissors the objections which present themselves are, the bruised wound, the irregular division of the muscle, and the difficulty which often arises of obtaining a sight of the fibres of the muscle after the first incision, for the inner canthus is generally filled with blood, and unless time be taken to sponge the part, and stop the bleeding, the remaining steps of the operation must be involved in obscurity, and uncut fibres sought for and divided in the dark.

To the use of a knife without a director or hook, the objections are so obvious, that I believe few surgeons have tried the experiment; though, I regret to say, I have seen a surgeon of very great experience attempt this, and the consequences were, as might have been expected, a wound into the sclerotic, and the escape of the vitreous humour. Should the muscle have been secured by means of a hook, and a knife be desired to divide it, two questions suggest themselves, namely, should the muscle be divided from within to without, or from without to within? and what kind of knife is best adapted for the purpose?

The blunt-pointed bistoury has been employed to divide the muscle from within to without, between its insertion and the hook; but the objections to the use of the bistoury are, the difficulty of getting it under the muscle, particularly where the eye is small and sunken; the pain it occasions to the patient during the time it is being pressed forward through the muscle, after the manner of a sharp wedge, there being seldom room to permit of any sawing motion with the edge of the bistoury; therefore it must, more or less, while being pressed forward through the muscle, raise the edge from its socket; and, lastly, the danger there is of the patient making an accidental resistance while a sharp cutting instrument is fixed between the muscle and the globe.

The common scalpel has likewise been employed to divide the muscle between its insertion and the hook, cutting in a direction from without inwards. The

only objections to which are, the difficulty the surgeon experiences in applying the cutting edge of the instrument in a direction favourable to a quick and clean division of the muscle, and the danger, at the same time, of its being thrust into the eye during any sudden resistance of the patient.

To lessen these difficulties and dangers, I beg to suggest to the profession the use of a knife which has afforded me the utmost facility in effecting a speedy and clean division of the muscle close to its insertion.



It possesses all the properties of a scalpel, namely, utility, effectiveness, and safety, in a smaller space than any other instrument with which I am acquainted that has been adopted for dividing the internal rectus muscle: the blade consists of two parts, a rounded portion, resembling the blunt part of a hernia knife, and a small flat sharp extremity, having a transverse cutting edge, which at one end terminates in a shoulder by uniting with a short sharp front edge, while its other extremity forms a point by meeting the back edge at right angles, so that we have the transverse effective part of the blade in immediate connection with the useful shoulder and point. The annexed engraving is a correct representation of the knife as made by Mr. Weiss. The instrument described cannot be thrust into the eye by any sudden accidental resistance of the patient; and this safety is owing to the position of its straight cutting edge, which does not require any sharp part of the knife to be directed towards the globe of the eye during any moment of the operation: the muscle being slightly raised across the blunt hook, its fibres are divided transversely by the knife, its edges being directed towards the hook, but at right angles to it, so that the flat side of the blade is held towards the eye.—I am, sir,

Your obedient servant,
JAMES J. ADAMS.

27, New Broad Street, City.
August 17th, 1840.

A RARE DISLOCATION.

To the Editor of the Medical Gazette.

SIR,

IF a report of the following rare accident is not too lengthy for your journal, you would much oblige me by publishing it.

I am, sir,

Your humble servant,

N. J. HAYDON, M.R. C.S.

Bodmin, August 25, 1840

Dislocation of both radio-carpal articulations. The left carpus backward, the ulna being also dislocated from the right radius: the right carpus forwards, ulna not dislocated from radius, unattended with fracture.

John Davey, aged 13 years, applied to Mr. R. Rudall, of Sheepwash, on June 11th, 1840. He had been thrown very violently from a horse, and fell on the upper part of the palms of both hands, and on his forehead. On examining him we found a lacerated wound of the scalp, about two inches in length, inclining from the mesial line to the left eyebrow: the left wrist presented a considerable protuberance on its anterior aspect; the styloid process of the radius no longer had its position opposite to the trapezium, but was thrown before the carpus, and took up its residence on the scaphoid and trapezium: the ulna was dislocated from the radius, and rested on the unciform bone; the forearm was slightly bent on the humerus; the fingers similarly flexed on the hand throughout their articulations. During the reduction of this wrist the patient complained of no pain.

The right wrist presented a very considerable tumor on its posterior aspect, occasioned by the presence of the carpal head of the radius and ulna, and a very irregular knotty tumor terminating abruptly on its anterior aspect, caused by the presence of the bones of the carpus. The forearm was very considerably flexed on the humerus, and in a state between pronation and supination; the thumb strongly abducted; the metacarpal phalangeal articulations in a state of the greatest extension on the metacarpus; the two extreme joints slightly flexed. There was a strong aversion to have the arm moved, the slightest motion causing extreme agony: there existed in this arm no dislocation of the

ulna from the radius. A very careful examination was made to determine what parts came in contact with the resisting force. We found very extensive bruises on the palms of both hands, but not the slightest on the back of either hand. We could not obtain the slightest evidence of any fracture existing; and recollecting the opinion of Dupuytren, "That there was not a single unequivocal instance on record of a dislocation of the radio-carpal articulation;" and, "that he invariably found these pretended accidents always turned out to be fractures of the radius near the articulation," we were very careful in our examinations. Moreover, we were strengthened in our opinion that these were cases of dislocation unattended with any fracture, because the dislocations appeared so perfect, the two tumors in each member so distinct, the reduction so complete, the strength of the parts so great after reduction, the very trifling pain after reduction. Within an hour after the dislocation was reduced the patient could rotate the hand, and supine it when prone. This could not, we believe, have been done had there existed a fracture; and lastly, in the right arm the radius retained its exact parallel relation to the ulna, extending a little beyond it. On the left the ulna was carried a little inwards and forwards, and so remained after the radio-carpal dislocation was reduced. We should not have reported this case had it not seemed important, and one of very rare occurrence; for we find in one person from the same accident, *and from a force applied in the same manner*, one presenting a dislocation of the carpus backward, the other presenting the carpus dislocated forward.

Sir Astley Cooper, whose long experience gives to all his opinions great weight and value, states at page 502 of his work on Dislocations and Fractures, that "the dislocation of both bones is not of very frequent occurrence; but when it does happen the bones are thrown either backwards or forwards, according to the direction in which the force is applied." "In the dislocation of the radius and ulna *backwards*, the person falls upon the *back* of the hand, the radius and ulna are thrown upon the posterior part of the carpus, and the carpus itself is forced under the flexor tendons."

Dupuytren made some curious calculations as to what force would be necessary to effect a dislocation of the radio-carpal articulation, and states his most entire disbelief in the possibility of the accident. Baron Boyer, p. 256, vol. iv. of his "*Maladies Chirurgicales*," states, "Notwithstanding the violence of the efforts, capable of overcoming the resistance of the tendons and ligaments, so as to produce a luxation of the hand, this luxation can take place in four different ways; to wit, backwards, forwards, inwards, outwards. The luxations backwards and forwards are by far more frequent than those inwards or outwards."

The rarity of an accident of this nature induced me to forward a copy of this case to Sir A. Cooper, who suggests—"Is it not possible this patient might have fallen on the back of one hand and the palm of the other?" To this I can only answer, that the extensive bruises and laceration on the palms of either hand, more especially on the ball of the right thumb, while there is not the slightest bruise or laceration on the back of either hand, seem to afford fair evidence where the resisting force was applied. Respecting the opinion of Dupuytren, Sir A. Cooper says, "That Dupuytren was undoubtedly wrong, although the dislocation is rare."

The treatment of our patient was very simple. The left wrist was speedily reduced. The elbow being fixed, extension was made from the hand, at the same time gradually flexing the hand on the forearm. The right wrist, the elbow being fixed, was reduced by firmly grasping the thumb, the operator's thumb being applied over the outer part of its metacarpal bone, while his index-finger firmly embraced its ball; gradual and direct extension was maintained for several minutes; when the carpus resumed its position, a very distinct and audible "*click*" was noticed by several persons present. Splints including the forearm and hand, with roller bandages, were applied, and retained for eighteen days, the parts being kept cool with evaporating lotions. The progress of the patient was altogether favourable.

June 24th. — Attentively examined both wrists this morning: the patient remains free from pain, there is no deformity: considerable swelling and stiffness still continue, the usual effects

of extensive laceration and spraining of the ligaments. Splints and bandage again applied, and retained until June 28th, when they were discontinued, as the swelling had nearly subsided, and the wrists had regained sufficiently their power to admit of all the usual movements of the hand being freely exercised; a bandage was, however, still retained on the right wrist.

July 16.—We saw the boy this day at his usual work on the farm; complained of no pain, but considerable weakness. There remain a stiffness and some enlargement around the joints, but this appears to be gradually subsiding. The bandage was left off to-day, and the patient told to have his wrists pumped upon several times daily.

SOME REMARKS

ON THE

CONNEXION OF TUBERCLE

WITH A DEFICIENCY OF THE COLOURING MATTER OF THE BLOOD, AND ON THE EXHIBITION OF IRON.

By J. B. HARRISON, M.R. C.S.L., &c.

[For the *London Medical Gazette*.]

DISEASE may be regarded as a concatenation of morbid states connected as cause and effect, and pursuing a fixed course. One condition is the result of the preceding, and, in its turn, is essential to the sequent derangements. Now it has always appeared to me that in those diseases which are considered beyond the reach of medical skill, we should do well to investigate attentively and patiently the first symptoms of disorder, and endeavour to trace, with precision, the earliest deviations from health. The primary condition of disease may be one which we are capable of rectifying, and, therefore, it ought to be most accurately investigated. Rigid inquiries into the slight aberrations from health, which, in a strictly philosophical sense, lay the foundation of hopeless maladies, are, it is to be lamented, too much neglected; and when a succession of morbid conditions has carried on the train, and built up the ultimate disease, it is then too late to remedy the evil.

We have been led to make these remarks more especially with reference to the origin of tubercle, as it seems to us that much advantage might be de-

rived from an investigation into the state of the system which precedes the development of consumption, and further, that this condition is capable of being rectified.

It appears probable that one of the first steps towards the production of tubercle is that of a disordered state of the blood; an essential condition of which is a deficiency of the red particles. The word *anæmia* is sometimes used to signify that state of the blood in which the colouring matter is not in proper proportion, though, strictly speaking, it is applicable only to a want of the blood itself. But the abstraction of blood has, no doubt, an influence on the quality of the blood, and the two states are so commonly found united, and are so similar in their nature and symptoms, that it is not always possible to arrive at a rigid discrimination. Perhaps the female sex furnishes us with some of the most marked examples of this condition of the blood. It will readily occur to the mind that women are more especially liable to the occasions of the disorder,—how often the female system is drained by profuse hæmorrhage and repeated discharges, by protracted lactation, miscarriage, or disordered menstrual secretion. Hence the morbid delicacy with which we so frequently meet in the female sex—the pale lips, the extraordinary whiteness of the hands, the blanched conjunctiva, the dyspnœa and palpitations; in short the exsanguineous and corpse-like nature of the skin.

But this state of the system is also derived from other causes, as from that hereditary constitutional peculiarity which is incompatible with the generation of healthy blood. Sometimes it is dependent on the continued use of depraved and deficient food; in other instances, it is produced by debauchery and excess, or by the luxurious habits and modes of life in which the higher classes indulge. These causes operate, no doubt, injuriously on the blood, and whilst they impair its quantity, seem especially to destroy that constitution which is co-existent with a healthy proportion of the colouring matter. We will not presume to say that all instances of tubercular disease are found to originate from this anæmical state of the blood, for when the pathology of consumption is better understood it will doubtless appear that two or more causes, of very different natures, may produce a similar

effect; but it certainly seems borne out by observation that in very many instances tubercle arises from a morbid condition of the blood, and especially from a deficiency of its colouring matter. It is unquestionable that the red particles of the blood exercise an important office in the constitution of the vital fluid. One object may, perhaps, be to give this fluid a character by which it may be easily distinguished; by which its escape may, under all circumstances, be noted, and no dangerous hæmorrhage be permitted to go on. In the colour of the blood we seem to have a striking evidence of that providential care which is ever displayed in the works of Almighty wisdom, and perhaps none of those which are commonly adduced will appear more satisfactory to the medical philosopher.

But this, though one, and a very essential object, of the red particles of the blood, is not its only purpose. In the economy of nature we perpetually find the same property rendered available for a variety of ends, to which it seems equally well adapted, and on the fulfilment of which the preservation of the body is equally dependent. The red matter of the blood is possibly one of those essential agents in the balance of vital affinities to which the attention of writers has of late been so profitably given.

There are strong reasons for supposing that the presence, absence, or wrong distribution, of minute portions of matter, may exercise a very important influence on the arrangement of the animal organization, and by a kind of disposing affinity render the incongruous atoms capable of composition, and if we be allowed the expression, fill up the interstitial vacancies in the chemistry of life.

Nor can this be regarded as too amazing for belief, if we allow that the operations of life bear any analogy to the wonders of voltaic action, or the equally surprising metamorphoses of inorganic chemistry. We know how slight a cause is able to effect a total change in the physical composition of bodies, converting soft textures into hard ones, or crumbling the hardest into dust; and it seems by no means impossible, from the researches of modern investigators, that this subject will, before long, receive considerable elucidation. We find the following passages on the subject, in some of those recent publications for

which we are indebted to the munificence of the Duke of Bridgewater:—"The sap," says Dr. Roget, "holds in solution, besides carbonaceous matter, some saline compounds, and a few earthy and metallic bases; bodies which, in however a minute a quantity they may be present, have unquestionably a powerful influence in determining certain changes among the elements of organic products, and in imparting to them peculiar properties; for it is now a well-ascertained fact, that a scarcely sensible portion of any one ingredient is capable of producing important differences in the properties of the whole compound. An example occurs in the case of gold, the ductility of which is destroyed by the presence of a quantity of either antimony or lead so minute as barely to amount to the two-thousandth part of the mass; and even the fumes of antimony, when in the neighbourhood of melted gold, have the power of destroying its ductility. In the experiments made by Sir John Herschel, on some remarkable motions excited on fluid conductors by the transmission of electric currents, it was found that minute portions of calcareous matter, in some instances less than the millionth part of the whole compound, are sufficient to communicate sensible mechanical motions, and definite properties, to the bodies with which they are mixed.*"

Dr. Prout, in his valuable treatise on Chemistry and Digestion, has also entered into this subject: "Besides," says he, "the essential molecules constituting the ground-work of a living organized being, and which probably exert on each other, to a certain extent, the ordinary chemical influences of matter, it would seem that there are, at the same time, diffused throughout the whole living mass, in exceedingly minute proportions, various other matters, the molecules of which appear to be in a high state of self-repulsion. By these incidental matters it would further seem that the ordinary chemical properties of the essential elements are hindered from assuming a regular crystallized form. Moreover, these incidental matters entering into the composition of a living body, apparently furnish the organic agent new powers utterly beyond our comprehension; which powers the organic agent has been

endowed with the ability to control in any manner that, from the exigencies of the living organized being, may become requisite*."

The controlling molecules, to which Dr. Prout refers, are those which are commonly regarded as extraneous bodies—as sulphur, phosphorus, iron, sodium, calcium, magnesium, and the like, which we know are to be found in the composition of organic bodies. To the existence of these particles he also ascribes the difference of texture, &c. found in bodies of the same chemical constitution. "We may now observe," says he, "that they (the foreign bodies) seem to us to contribute towards the production of those striking differences observed among bodies having the same essential composition, and which diversity, at first sight, appears so mysterious. How these minute quantities operate we do not precisely understand; but we can imagine them to be interposed among the constituent molecules; further, that the molecules of these incidental matters are in a state of strong self-repulsion. Such being the case, it is not unreasonable to expect that they may have the power of modifying the arrangement of the constituent molecules, and thus of altering the sensible properties of the substance produced by their combination.

"We have stated our opinion that the molecules of incidental matter in organic substances are in a state of self-repulsion. This opinion is founded principally on the equal diffusion of those incidental molecules throughout the organic substances in which they exist, and on their consequent great distance from each other, which perhaps can hardly be otherwise explained†."

These observations would render it probable that the iron, and other organic matter in the blood, may be designed to influence the affinities of the blood, and prevent the operation of attractions, which would otherwise come into play, and destroy its homogeneous character‡. Now it seems, from the re-

* Page 28.

† Prout, *op. cit.* *ibid.*

‡ Mr. Couerbe has stated, (see *Ann. des Sciences Naturelles*, 1834, t. ii. p. 249.) that on the due proportion of phosphorus in the brain depends its variety and fitness for the maintenance of the mental functions; but, as Dr. Alison remarks, from whose work this quotation is extracted, this observation has not yet been confirmed by others. —See the Supplement to the *Outlines*, p. 46, third edition.

searches of modern pathologists, and especially from the inquiries of Dr. Carswell, (see the art. Tubercle, in the Cyclop. of Pract. Med.) that it is highly probable that tubercles originate from the existence of a state of blood which favours the cohesion and separation of certain of its constituent parts. The albuminous portion of the blood seems especially apt (possibly from a want of the repulsive molecules of inorganic matter) to exude and cohere into minute spherical masses, which are destitute of the power of acquiring an organised structure themselves, but grow by attracting to themselves fresh matter from the vessels*.

But it may, with reason, be objected, that though a deficiency of the red particles of blood, and perhaps indeed of iron in the blood, may be allowed as a principal cause of the changes in the constitution of the blood which originate tubercular disease, it does not by any means follow that we are able to introduce that metal into its proper place in the system. It must always be remembered, as it is justly observed by Dr. Prout, that "we have not in artificial chemistry" (and the same applies to medicine) "any control over individual molecules, but are obliged to direct our operations in a mass formed of a large collection of molecules. The organic agent, on the contrary, having an apparatus of extreme minuteness, is enabled to operate on each individual molecule separately, and thus, according to the object designed, to exclude some molecules, and bring others into contact†."

It is well known that in the cure of rickets we have a want of osseous matter in the system, or, at all events, an improper distribution of it; but it does not seem that we are capable, by the exhibition of the salts of lime, of remedying the defect. Fortunately, however, in the case of iron, though we could not, *a priori*, have arrived at the conclusion, we seem able to produce a really beneficial effect by its administration‡.

To many readers these remarks on

the influence of minute quantities of inorganic matter, in controlling the whole constitution of organised beings, may seem to border on the absurdities of homœopathy; but it would be unphilosophical to shut ourselves from the light of modern investigation, from the fear of ridicule, or because some men have carried their views to a ridiculous extent. Without recurring to chemical experiments to prove the agency of minute portions of matter, in altering the affinities and polarities of large masses, we have abundant evidence of it in the science of medicine itself. The influence of small doses of medicine, and of certain poisons, on the nervous system, could not surely admit of any explanation which did not recognize an equally wonderful power over organized beings; but the effects of vaccination are still more convincing proofs of the surprising changes which are produced by apparently inadequate causes. If we only consider that the vaccine lymph protects the body for a series of years without producing any continued palpable change, and without setting up any chronic disturbance in the system, during its preservative period, we cannot fail of being astonished at so wonderful a result. It seems, indeed, to be almost a supernatural agency; it defies all reasoning, and appears to be the triumph of experience.

However, the observations which are here offered as to the possible influence

found not to contain its proper quantity of the red particles of the blood.

The disposition to consumption produced by anæmia also engaged attention.

In this place it may not be uninteresting to insert the following quotation:—"In a letter addressed to the Royal Academy of Medicine, M. Coster announces that, from certain experiments which he has made, he hopes to prove—

"First, that it is possible, even in the face of predisposing causes, to prevent the development of the tubercular diathesis.

"Second, that even where the formation of tubercles has commenced, their progress may, in a great number of cases, be arrested.

"The following are a few of the experiments upon which M. Coster has built up his hopes:—

"Two years ago he placed a number of dogs, rabbits, &c. in the circumstances most favourable to the development of the scrofulous diathesis. Thus many of the unfortunate animals were shut up in dungeons, without light, incapable of moving, exposed to a moist cold by means of wet sponges which were hung up in the cages. Some of the animals placed in these conditions were fed on their ordinary diet; others were fed with ferruginous bread, containing half an ounce of carbonate of iron to the pound. All the former became ill, the greater part tuberculous, but not one of those fed on the bread containing iron presented a trace of tubercles."—*Lancet*, Feb. 15, 1840, p. 772.

* Vid. op. cit. p. 480.

† Prout, op. cit.

‡ Dr. Thompson is reported to have said, in a meeting of the Westminster Medical Society, Feb. 8, 1840, that in Vienna several horses had been fed upon food containing different quantities of iron, and that in the direct ratio of the quantity eaten, that is, of the iron contained in the blood, was the amount of the red colouring particles. On the same occasion Mr. Verrell stated, that the blood of poor people, when examined, was

of iron, and other inorganic matters on the blood, in preventing tuberculous concretions and other heterologous formations, must only be regarded, in the present state of knowledge, as conjectural; and if they should offer any rational grounds for the treatment of those states of constitution which precede the most fatal of diseases, they will answer every object intended.

If considerations like these should only lead any to give trial to a rational system of experiments, as to the mode of treating those diseases which are too commonly abandoned as incurable, it would do more to rescue the profession from impostors than all the invectives which can be heaped upon them. We do not mean to say there is any ray of hope for the advanced stages of these complaints, but probably more may be done than has hitherto been effected in the detection and treatment of those constitutional peculiarities in which they originate.

Whilst the attention of the profession has, perhaps, been too exclusively occupied on pathological appearances, and little hope has been held out for the relief of some of the most frequent and distressing complaints, we cannot be surprised at the encouragement which the irregular practitioners have received, even from the higher ranks of society, and those who undoubtedly possess considerable mental attainments. We have only to bear in remembrance the natural tendency of the human mind, when all other hope is destroyed, to cling with credulity to the most improbable or distant prospects of advantage.

In regard to the form in which iron should be exhibited, we have nothing particular to remark. We may observe, however, that the efficacy of the medicine does not seem necessarily to increase in the ratio of the quantity given. The portion of iron taken into the system may depend on a kind of elective operation, such as appears to regulate the reception of inorganic matter into the vegetable world. At all events, the large doses of the sesquioxide of iron which have been used, without a corresponding benefit, should not be allowed altogether to bring the medicine into disrepute.

The tincture of the sesquichloride of iron is, perhaps, one of the most elegant and efficient of ferruginous preparations;

and the divisibility of this compound may be one cause of its efficacy. On the same account the precipitated carbonate of iron, as recommended by Mr. Carmichael, is, no doubt, a very advantageous form for its administration*.

There can be no doubt that great benefit would arise from more attention being paid to the divisibility of medicines; and on this subject we are glad to avail ourselves of a quotation from the pen of one of the most practical and useful physicians which this or any other country has ever produced. "The mineral springs," says Dr. Armstrong, "which contain iron, have only a very small portion of that metal suspended in them, and yet they are far more efficacious than the ferruginous preparations which we prescribe; and here we are again led to conclude that our ordinary mode of administering this metal should be abandoned, and one instituted similar to that which nature has afforded to our observation. There is a divisibility in the preparations of nature which is unpractised in the usual combinations of art; and it would probably be well for mankind if this divisibility were much more frequently imitated in medical prescriptions†."

REMARKS
ON
CONTINENTAL EDUCATION.
FLORENTINE SCHOOL—BUFALINI.

[For the Medical Gazette.]

MY DEAR —: As I have already said, the German manner of clinical education is in use in the Tuscan schools; but even in Florence the whole system of their transmontine allies is not fully developed in regard to it. The real distinction on this point, betwixt the Universities of Austria and Tuscany, is the total neglect on the part of the latter of those specialities in the study of medicine which form so fine a feature of a continental education in this branch of science; we may, therefore, say, without hesitation, or fear of outraging truth, that the once free and genial Italian has basely copied from his conqueror all the ills of a forced education, and refused through indifference the excellencies it

* See the *Dub. Med. Press*, p. 153, March 4, 1840.

† See the observations on chronic diseases and sulphureous waters, affixed to his vol. on *Scarlet Fever*, p. 460, 2d edit.

offers, which national genius had attached to it at an earlier period. Special pursuit in the cultivation of our art is no mere dream of the imaginative mind, nor yet the short conceit of empiricism; for we find our reasonable countrymen accept it as a practical good in the daily routine of the physician, whilst the philosophic German acknowledges its value as a truth, in adopting it *a priori* in his schedule of courses of study. We must not heed so much the new tendency springing up amongst some of our colleagues in France in favour of an opposite doctrine, since these are, for the most part, men of opinion, and strive at a false unity in things, and too great simplicity of system. It is an easy task to act the roll of physician here; it is only necessary to make a fair diagnosis—to maintain the trifling value of remedies, and effect a belief of danger attached to those more potent—to praise the curative powers of unaided nature, and in fatal cases to admire how many morbid processes have conspired to steal away the life of the patient. The zealot is a thousandfold better than the sceptic in all matters; so also in medicine.

The Florentine medical and surgical clinique present respectively about thirty beds: eighteen in the females' wards, and twelve in that of the men. This is about the utmost number of patients one can attend to, according to the manner of the Germans. The cases are in general well chosen, for the Florentine teachers are strongly doctrinary, but not eclectic like the Germans; and hence we find them much more zealous physicians. To defend dogmas, and maintain personal opinions, arouses men to work with promptitude and energy. Bufalini, the clinical professor in the medical department, is an ingenious physician, and author of the theory of localisation; a set of views on pathology, founded much on truth; but, like all other theorists, he has carried his generalisations beyond their scope. His therapeutic agents are of course greatly modified by opinion, and we find in him neither the striking boldness of Tommasini, and the followers of Rasori; nor the timid trifling of the German school; nor the scepticism of the French. He seems a sort of middle man, who yet leans more to the confidence of the new Italian. I was sorry, however, to find him treat his patients on grounds merely logical; and the unavailing nature of

his mode of cure sometimes made me wish it were a holy mandate that physicians must adhere strictly to the dictates of experience. There were other cases, however, in the treatment of which he borrowed largely from such authority; one of them was a woman of about forty-nine years, attacked by canine madness; she had been bitten by a rabid dog eight months previous to her admission into the hospital. After the usual premonitory symptoms, the febrile stage began, accompanied with the horror of water and delirium. The pulse, at first increased in quickness, then gradually decreased, becoming lower and less frequent until the fifth day, when the unfortunate sufferer sunk in death; the other febrile phenomena progressed accordingly. Here our English authors were the chief guides in the treatment, and calomel, with opium and acetate of lead, were used without avail, till, at length, the injection of warm water into the veins proved of value; it quickly relieved the horror of water, almost curbed the delirium, and calmed the sufferings of the poor creature. Canine madness was now no longer a fearful disease; the physician could command its pains and its horrors; but the patient terminated her mortal career at the usual term of the malady, yielding peacefully her life, as all those do who die from progressive failure of the heart's action. Blood was drawn from the arm twice, each time previous to the injection, in order to guard against excessive plethora which might thence result, and to afford the means of a chemical analysis, as well as to fulfil some hopes of its proper utility in the cure. There is one peculiarity in the blood in this disease: it is found to contain much free prussic acid, independent altogether of any secondary change, or the trifling quantity naturally present in this fluid under the ordinary circumstances. It is sometimes very considerable; at other times less so; but it remains for future observers to prove if its presence be constant; therefore it would be too hasty to detect some relation between its development in the circulating mass, and the gradual failure of circulating centre and disordered functions of the mind. It seems, however, only to appear after the febrile stage is ushered in; and this is quickly followed by collapse. The mental disorder, in this case, also bears the nearest resemblance to the delirium

of typhus, which is, for the most part, devoid of organic lesion, or even of morbid change of any kind in the vessels and solids of the brain; and the opinion that this depends on some fine alteration in the composition and qualities of the blood, which may act like narcotic medicines, (for there are animal compounds that do so), becomes daily more probable. The autopsy was made most carefully, and with unwonted neatness; the preparation of the nerves, leading from the cicatrized wound on the back of the right hand to the brachial and cervical flexus, was nicely done; yet no perceptible alteration was found in any part. The brain, spinal marrow, lungs and air-passages, stomach and alimentary canal, liver, spleen, pancreas, kidneys, urinary passages and bladder, and all the parts appertaining to the abdomen, and elsewhere, were more than usually sound and healthful looking. Dr. Bardsley tells us he always found little red ulcers in the mucous membrane of the stomach; now, in this instance, I examined it most minutely, and found not even the minutest trace of anything bearing the slightest shade of likeness thereto, nor yet blood-shot-vessels; if any thing was remarkable, it might be a layer of very transparent glairy mucus—an usual attendant on nausea, and the operation of such medicines as exert a powerful sedative action on the circulation. These ulcers, seen by him, were probably accidental, and, may be, such as we often find in the stomachs of English patients after all febrile complaints, and possibly owing to peculiarity of constitution and diet, and medical treatment.

Bufalini and his assistant use the stethoscope fairly and well; but he does not fail sometimes to make too hasty conclusions in diagnosis on its authority. Whilst I was in Italy he resolved a case of disordered action of the heart in an adult man to be hypertrophy to an unusual extent, and, after treating his patient a long time on this supposition with a half drachm of tartar emetic daily, the poor wretch died from a composition of maladies. The autopsy proved, in opposition to his opinion, that no hypertrophy or morbid alteration of structure of the heart was discoverable by any one of the five senses. Any reasonable man in our country would have admitted the commission of a fault of diagnosis in such circumstances; but

not so the sanguine Italian professor, as he directly imagined he had cured an extensive hypertrophy by the large doses of the active antimonial! Never supposing for a moment the possibility of an error in the means of forming his first opinion, he came to the school the following day, and delivered a brilliant lecture on the case, when he declared to his enchanted class, amid enthusiastic greeting, the glorious deed accomplished; the enlargement of this noble organ corrected perfectly by the heroic administration of tartar emetic; and henceforth the news was sent from Florence to all Italy. He was determined not to doubt in the least his particular use of auscultation, even in one instance; and the old and accomplished Testa was here proved to have written his celebrated work on the maladies of the heart in vain; he, although he lived before the time of the stethoscope, would not have spoken so wildly, nor made such a great error in judgment. He would have simply seen one of those cases of nervous and sympathetic anomalous action of this organ, which are most especially manageable by means directed against the primary disease, and to the improvement of the general health, and specifically by the use of iron, either in form of sulphate, as our Abercrombie recommends, or still better, in the form of hydrocyanuret, or ferrocyanurate of this metal, as generally employed by the Italians.

We have two means of judging the physician: by his success and errors; and as Bufalini is destined to be famed in foreign parts, I have shown him to you under both colours, to guard you against that fatal charm which forms a sacred halo around a foreign authority. "I will write it down—'tis meet it should be known"—we have the best physicians at home; but alas! the man of opinions will still remain the many-people's man.

There is an excellent madhouse in Florence, and a distinct division for skin diseases, in the Military Hospital, for all classes of patients; but these are not all available to the school in a clinical view, since there is no clinique on diseases of the mind or of the skin, nor any on those of children, or of the eye, nor yet an obstetric clinique. This last hospital offers the means, among the soldiery, for clinical instruction on the cure of syphilis, and this is likewise left unheeded: thus custom

governs men, and governments rule amiss. The German style is therefore followed without its completeness. On the whole, however, the Tuscan physicians, together with the Genoese, obtain the longest practical education in their art of all continental nations, beyond France.—Very sincerely yours,

July 31st, 1840.

MEDICAL GAZETTE.

Friday, September 4, 1840.

"Licet omnibus, licet etiam militi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."
CICERO.

WHAT IS WANTED IN MEDICAL LITERATURE?

If a country practitioner, who judged of the progress of medical literature by the advertisements of new books, were to be asked his opinion concerning it, he would probably reply, that the variety and abundance of fresh information were sufficient to gratify the most fastidious inquirer. And, indeed, there are sufficient facts to render this opinion plausible, if not correct. At least a hundred new medical books and pamphlets are yearly sent forth by the presses of the United Kingdom; and if to these we add the libraries annually disgorged in France, Italy, and a score of German Universities, the sum total will appear overwhelming. The *embarras des richesses*, or choice rendered doubtful by the variety of opulence, might seem to be the only difficulty left. The fact, unfortunately, is otherwise; and if asked what is wanting among new medical books, we must frankly answer, something practical and instructive. The impatient critic is ready to wander about and cry, "I seek a book!" as Æsop said, "I seek a man!" If titles, indeed, could satisfy him, they are not wanting; but it is too generally a Barmecide feast, with names

instead of dishes. "I have ten new title-pages now about me," says a bookseller, in Goldsmith, "which only want books to be added to make them the finest things in nature." The student, grown grey in painful experience, knows how often the enticing title-page, if not absolutely without the pretence of a book to follow it, is prefixed to a mere shade of a book—a thing of shreds, patches, and pretences.

Personam tragicam forte ut vulpes viderat,
"O! quanta species," inquit, "cerebrum non habes!"

But let us consider a little more fully some of the characteristics of the medical literature of the day. They are chiefly two in number; the one is the dedication of so much professional talent to the theory of physic, particularly to physiology; the other is the slight texture of the books which are nominally practical.

When we speak of the entire devotion of so many ingenious men to the study of physiology, it is difficult to express ourselves so as to avoid being misunderstood. To censure this pursuit, however mildly, seems unjust; it is like finding fault with the practice of physic itself; for it may be asked, without physiology, what is pathology? How can you determine the exceptions without knowing the rules? How can the physician assert that the pulse of his patient is too quick, if unacquainted with the regular beat of health? Nor can it be said that even this simple fact is well ascertained; the pulses of infancy and old age, in particular, seem to have been fixed from too small a number of examples. *Pour connaître homme malade*, says a French writer, *il faut connaître homme sain*. Nevertheless, we might almost apply to physiology what Boerhaave said of chemistry, that although it was an excellent handmaid to medicine, it was a very bad mistress. Those who pursue it with the greatest ardour sometimes care the least for its

practical applications; the pleasure is in the chase, not in devouring the game. Yet it is equally true, that even those who show too exclusive a devotion to physiology for their own practical advancement, may be eminently useful to others; from the philosophic heights which they have ascended, they can point out those regions to others which they themselves are not permitted to enter. When we consider, too, the patient industry and discriminating talent which are required to make even a moderate physiologist, we must allow that the numerous cultivators of the science exhibit irrefragable proofs of the sincerity of their professional zeal. We almost regret, however, to learn that so many now devote themselves to microscopic observations, as the connexion of their discoveries with practice seems but slender. Pupils, in particular, must rather shun this fascinating occupation. Indeed, though they should master the leading points of human physiology, they will do well to leave most of its refinements to a later period. If the pupil takes to the higher walks of the profession, the possession of his diploma will give him ample time for study; according to Dr. Young, indeed, the physician in a metropolis must be prepared to pass at least ten years without deriving the slightest emolument from his profession.* Perhaps this is rather too hypochondriacally stated; but, if it is, as we fear, a near approximation to absolute reality, the young physician, and we may add, the young surgeon, will have abundance of leisure for physiology in all its varieties.

What is wanting in this branch of medical literature is an author who shall bring down philosophy from the clouds to walk on earth; who shall not only combine the scattered fragments of so many experimentalists into one harmo-

nious whole, but shall show their practical bearing.

In this department, however, there is little to be ashamed of; and even when we do not reap immediate fruit from the author's labour, we may hope that he has been planting for posterity.

But in the books which are nominally practical, there is much to make us uneasy. Facts few and insignificant, lame reasoning, a wretched style, and a tricky pretence of novelty, too often make us blush for the author, both as a practitioner and as a man. Indeed, when accurately examined, the book is not so much puffing, as a puff. Those imaginative writers, in whose recorded dreams each gilded nothing sinks into its primitive zero, might tell us how, under some fairy wand, Dr. Z.'s work on Digestion, and Mr. X.'s treatise on the Spine, were resolved into five hundred advertisements in the Times and Chronicle.

These unlucky books—these advertisements in sixteen octavo sheets—are but one of the symptoms of the excessive competition existing in our profession. Each candidate for a subsistence is urged on by his anxious friends to "write a book on something;" and too often yields to these ill advisers. His work may be considered a morbid breaking-out produced by these stimulating applications; and time, which soon removes the offending work, as the natural remedy. The indecent haste, too, with which many of these productions are brought forth, deserves its portion of censure. We actually recollect a writer who promised in one part of his treatise to take up a particular subject again if he found that he had room! So that while printing the first sheets of his book, he did not know what space would be occupied by the remaining ones. After all, it is difficult to be very harsh with such authors; as the Frenchman said in the story, *il faut que tout le*

* Med. Liter. 2d edit. p. 18.

monde vive; and though the reply was, *je n'en vois pas la nécessité*, most persons will side rather with the poor writer, than with the cynical minister. It is right, however, that the student should be on his guard against these expanded advertisements, these books which are not ephemeral, as they do not live even a day, but, in the language of reviewers, drop still-born from the press.

We might here speak of sham second editions, and warn our readers against those forcible exhumations of dead books; but we gladly pass on to a more pleasing subject. Putting aside all the make-believe books written only for the columns of the newspaper, and the counter of the grocer, and the still more numerous host which are damned with faint praise, and live for half a season, medical authors, in this country at least, are too few. How many distinguished practitioners go off the stage with the applause of their contemporaries ringing in their ears, yet leave scarcely a line to be remembered by. This should not be. A mere summary of the results of extensive practice would be useful, and short hints would add to its value. Yet fear or indolence keeps them back. The ingenious author of whose *Esquisses* we gave a specimen three weeks ago, observes that "there are physicians rich in facts, in knowledge, and in experience, who constantly delay the publication of the results they have obtained. Why do they wait? Time passes on, science progresses, ideas change. What cannot be done at one time cannot at another; and thus it often happens, that work put off is work not done. MSS. long kept in the portfolio wrinkle, and become strange to the actual world of science. A man has worked at his book, and perhaps continues to work at it still; but is he ignorant that there is an enormous distance between an intended and a published work? We may here

apply the old proverb: "when one has ten steps to go, nine are only half way."

But if it is a loss to the medical republic that men of note keep back the results of their private practice, how much more injurious is the silence of so many hospitals! The registers of a dozen great infirmaries for twenty years would clear up more doubts, and solve more medical problems, than a myriad of ordinary books.

UNION SURGEONS.

IN our number for the 29th of May, we commented on the niggardliness displayed by the Poor Law Commissioners towards Union Surgeons, and their constant attempts to crush at once the poor and the profession. Those, indeed, who are the most eager to do the one are nothing loath to do the other. Colonel Wade, the Assistant-Commissioner, who is so staggered by a Union where the medical expenditure is elevenpence per head on the population, is equally mortified that the repayment of loans cannot be squeezed from the poor, by all the machinery of the New Law. This part of the Act has filled every one else with unutterable disgust; and as a law cannot be carried into execution when every one combines against it, the wages of the poor ploughman are not attached according to the provisions of the Act, and the wishes of Assistant-Commissioner Wade. This would dumbfound most men: not so the Colonel. He hopes in the midst of despair, and continues to cast his longing eyes on labourers' wages. "This part of the Poor Law administration, then, requires immediate attention and amendment; and, if possible, some more summary process for the recovery of loans should be devised than that afforded by an appeal to the Bench of Magistrates, and the attachment of wages in the hands of the master."

A more summary process suggests

itself to us, which we strongly recommend to the Colonel's notice ; it is that of employing a military force to collect the parish debts. In the cottage of the debtor a bed will probably be found (unless it has been pawned), and this, with a table and a few minor articles, will go far towards discharging a moderate bill. This will show people that the act is really meant to work, and that the "loan system" is of "easy application. A corporal's guard will, no doubt, be sufficient at first ; and if the parishioners should ultimately show any ignorant impatience, the debts may be collected, like tithes in Ireland, by a troop of horse. We doubt, however, whether the loan system will make the Commissioners very popular. According to Dr. Johnson it was tried without success by Dean Swift. He lent small sums to the needy. "A severe and punctilious temper is ill qualified for transactions with the poor : it was often broken, and the loan was not repaid. This might have been easily foreseen ; but for this Swift had made no provision of patience or pity. He ordered his debtors to be sued. A severe creditor has no popular character ; what then was likely to be said of him who employs the catchpoll under the appearance of charity ? The clamour against him was loud, and the resentment of the populace outrageous ; he was therefore forced to drop his scheme, and own the folly of expecting punctuality from the poor.*"

Mr. Sheridan asserted from his own knowledge that the whole of this account was a fiction ; but it is easy to see that it is, at least, a consistent one ; and that charitable loans, with forced repayment, would excite universal indignation.

We must content ourselves with touching upon one topic more. Sir

Edmund Head, in discussing the question whether the rate of remuneration for Union surgeons requires a general increase, argues for the justice of the present rate of payment, on the ground that it is right to take advantage of the indirect payment which accrues by the increase or retention of private practice ; and observes that "an attorney has often spent more in a canvass and election for a coronership than the office itself is worth, merely because it led to an increase of his other business." But the plain difference between the two cases is, that the country does not take advantage of the competition among attorneys to lower the fees of coroners to an unseemly minimum, and merely looks with neutral eye on the lavish expenditure of the candidates in post-chaises and agents ; while Unions engage surgeons at salaries which will not always furnish proper drugs, and any attempt at obtaining a decent recompense is crushed by the central power of the Somerset House triumvirate. He thinks the public can hardly be called upon to protect the medical profession against competition, and says, coolly enough, that "it is the interest of the public, as long as persons think it worth their while to be properly educated, to secure their services at the lowest rate which is compatible with their efficiency." Very likely ; but these superlatively low rates are *not* compatible with efficiency. The surgeon who attends a large district for 60*l.* or 80*l.* a year feels himself an ill-used man, whether the sum was proposed by a skin-flint board, or suggested by his own fear of being underbid. He knows that the bargain is not equitable, and, unless he is animated by extraordinary virtue, feels little inclination to pay a daily visit to a patient at the uttermost corner of the Union—five miles and a half by the nearest cut over the fields ! We must confess, however, that the

* *Lives of the Poets.*

Assistant-Commissioner hits us hard, when he says, "Competition is prevented in other professions by internal regulations, not by the assistance of that public who would profit by it. If an architect or a barrister violate the by-laws of the profession, he is treated as one who is not a gentleman. The same remedy is, of course, open to the medical men." *Fas est et ab hoste doceri*, and though we dislike Sir Edmund's tone, we admire his advice.

THREE REMARKABLE CASES OF DISEASE OF THE PHARYNX AND ŒSOPHAGUS.

BY PROFESSOR ROKITANSKY,
of Vienna.

1. *Dilatation of the œsophagus*.—K. J., ætat. 24, a servant, suffered for nine years from vomiting, which especially occurred after eating indigestible food. In the winter of 1833, he came to the hospital after four days' illness, the apparent consequence of having got drunk on beer. He complained of nausea, desire to vomit, faintness, hiccup, constipation, and thirst: the features were fallen; the eyes sunk; their lids livid; the skin dry; the temperature less than natural; the pulse very small and frequent; the tongue covered with a thick white fur; the abdomen large, rather hard, and somewhat sensitive in the epigastrium; the breathing short and quick, with a dry cough. Tartar emetic was given, and in the evening produced diarrhœa and vomiting of very stinking pulpy food, with great relief to the patient, but the cough and hiccup had increased. Oxyde of bismuth was given in half-grain doses with the emetic.

Next day there was copious vomiting of a brownish bloody material, with frequent hiccup, ringing in the ears, and cough, and the pulse was scarcely to be felt. On the following days, also, after leaving off the tartar emetic, the vomiting continued in a less degree. On the ninth day of the disease, however, it ceased; but the diarrhœa, hiccup, and coldness of the extremities, continued, and the general debility was increased. On the tenth day the diarrhœa ceased, and the body became uniformly and unusually warm; but, on the twelfth day, the diarrhœa recurred more violently than before, the abdomen became painful all over, and the temperature again fell below its right standard. On the thirteenth

the patient died, in an extreme degree of exhaustion.

At the post-mortem examination, the contents of the chest were found moderately healthy. The liver was brittle and full of blood, and consisted of coarsely granular, clear, and dark-brown substances. The gall-bladder was distended by thick, blackish brown bile. The spleen was shrivelled, dense, and purple-red; the pancreas pale-reddish, full of blood. The solar ganglion was purple-red; its outer substance beset by numerous punctiform extravasations of blood; the neighbouring venous plexuses turgid. The intestines were partially contracted; the jejunum contained a brownish mucus, the lower part of the ilium a dark-red mucous and bloody pulp, and the large intestine a yellowish soft fæces. The mucous membrane of the intestines was everywhere swollen: in the jejunum it was pale; in the lower part of the ilium dark red, with congested veins, and enlarged mucous glands. The kidneys were small, and full of blood.

The stomach contained a considerable quantity of blackish-brown fluid, mixed with chocolate-coloured lumps; its mucous membrane was swollen. The opening of the œsophagus was narrow, and formed a prominent folded ring in the cavity of the stomach, like the vaginal portion of the uterus. Above it, the œsophagus, up to the pharynx, was found dilated into a spindle-shaped pouch, which, at its middle, would have received a moderate-sized man's arm. It was filled, like a sausage, with a blackish-brown soft mass of small pieces, which formed a consistent cylinder covered externally by a layer of white mucus. The membranes of the œsophagus were generally thickened, especially the muscular coat, whose internal and circular layer of fibres was nearly a line thick. The muscular fibres were pale; the mucous membrane was thickened, and its tissue was traversed by very dilated but empty blood-vessels. From about an inch above the cordia, to the upper third of the canal, there were numerous ulcers, as large as lentils and silver *groschen*; they were round, with sharp-cut edges, and were here and there grouped or coalescing; their bases were formed within by the exposed muscular coat, or by a blackish brown adherent slough, in whose tissue one could see numerous vessels, with their orifices closed by coagulum.

2. *Diverticulum on the pharynx*.—A. A. æt. 66, a journeyman-tapemaker, of a tolerably robust form. On his admission into the hospital in August 1837, said that he had been healthy up to his seventeenth year, with the exception of the common diseases of childhood, and, especially, repeated swellings of the cervical glands: in that

year he observed the formation of a tumor in the right side of the neck, about three fingers' breadth below the angle of the lower jaw; it was not painful, but it gradually acquired the size of a pigeon's egg, and after three years it appeared to him to have extended a good deal forwards: at that time, *i. e.* in his twentieth year, he found a difficulty in swallowing, by being almost constantly annoyed by the sensation of a foreign body sticking in the upper third of the Œsophagus, from which he was sometimes relieved at night, when he lay on his back, by vomiting some of his food. He especially recollected having once suffered thus for three days, till the vomiting of a small quantity of perfectly undigested food, which he had eaten three days before, immediately relieved him.

This condition remained almost stationary for 43 years, but for the last three years the difficulty of swallowing had greatly increased: he could only take fluids, and even these at last caused him the same forcing agonizing sensation: the vomiting occurred more frequently, and was accompanied by rapid emaciation. Two months ago, moreover, he had had an inflammation of the lungs,

On examination, there was found on the right side of the neck a firmly-elastic tumor, nearly as big as a man's fist, reaching from the region of the larynx obliquely inwards and downwards to the right sterno-clavicular articulation, and even passing behind it into the cavity of the chest. In this tumor there was discovered the right lobe of the thyroid gland, hardened into a fibrous cyst, which the patient accused as the cause of his wretched condition.

On the left side of the neck it was noticed that the Œsophagus was blown out every time the patient drank, and that it formed a swelling as big as a pigeon's egg, which always disappeared directly after he vomited what he had drunk. Vomiting of the fluid just taken was produced by pressure on this swelling, as well as by lying horizontally on the back.

For three days, he said, he had vomited nearly the whole of the food that he had taken; every attempt to introduce an instrument into the Œsophagus was useless; it always came to a considerable constriction at one and the same spot, and beyond this it could never be passed. The patient was kept alive for eighteen days by nutritious enemata and baths.

In the organs of the chest and abdomen nothing remarkable was found on the post-mortem examination. The left lobe of the thyroid gland was small and flaccid; the right was converted into a fibro-cartilaginous thickly-walled sac, as large as a goose's egg, containing a turbid puriform

fluid, fibrinous coagula, and some bony concretions. This sac descended behind the right sterno-clavicular articulation into the cavity of the chest, receiving at its lower part a slight impression from the right clavicle, and flattening, in some degree, the trachea. The mucous membrane of the fauces and pharynx was thickened; that of the epiglottis and ary-epiglottidean folds was œdematous. At the inferior constrictor of the pharynx the mucous membrane was prolonged through the lowest horizontal fibres of that muscle into a diverticulum more than two inches long, and at least as wide as the pharynx, which was held by the cellular envelope of the Œsophagus in such a position that the canal of the pharynx led straight into its cavity instead of into the Œsophagus; so that whenever one tried to pass a finger or a sound into the latter it always passed into the pouch. It consisted, besides some few bundles of pale muscular fibres, of a thick layer of cellular tissue and a thickened mucous membrane, polished internally like a serous membrane, which was straightened at the bottom of the hernial protrusion by an irregular reddish deposit like that of lymph in serous cavities. Just below the mouth of the diverticulum the Œsophagus was very much narrowed, and its canal had only the form of a small transverse fissure: it continued thus also in its further course: its muscular coat was thick; its mucous membrane was constricted in thick longitudinal folds, and the veins ramifying in the subcutaneous cellular tissue were varicose.

3. *Fibrous Polypus of the Œsophagus.*—F. M., æt. 48, a day-labourer, of tolerably robust form, was taken into the hospital in February 1834. According to his account he had suffered some years ago from ague, and had thence become dropsical. About two months ago he first perceived a pain in the fauces, with difficulty in swallowing; the pain subsequently descended into the dorsal region, and was accompanied by cough and feverishness. In the hospital he had cough, which was especially troublesome at night, and afterwards cachexia, palpitation of the heart, anasarca, especially of the fore and upper extremities, and constipation, were the most prominent symptoms. The difficulty of swallowing seemed to have disappeared, for the patient, who, on his first admission, described it as but slight, at last ceased to feel it at all, and had a good appetite up to the 19th of May, when dyspepsia came on. After that time the dropsy rapidly increased, and he died May 27.

The stomach, at the post-mortem examination, was found moderately distended, and it contained, besides gas, a

greyish-white mucous fluid. Its mucous membrane was very much thickened, and covered with a grey, jelly-like mucus. The œsophagus was distended by a substance firmly seated in it, which, on opening its canal, was found to be a polypus, hanging from the pharynx, and reaching down to about two and a half inches above the cardia. It proceeded from the anterior wall of the pharynx, just below the posterior part of the glottis, where it was attached by a flattened round stem, about four lines thick, composed of the submucous cellular tissue, and it hung down in the œsophagus, covered by a thin mucous membrane. It was altogether seven and a half inches long, and it increased in size from above downwards, so that its slightly lobulated and knobbed lower end was two and a half inches in diameter. The œsophagus was closely contracted around its middle; externally, and especially towards its free end, it was blueish red; the mucous membrane covering it was injected, and covered by a puriform exudation; its substance was reddish yellow, very flaccid, soft, elastic, and composed of a fibro-cellular tissue. Just above the cardia there was an ulcer of the mucous membrane of the œsophagus.—*Medicinische Jahrbucher des K. K. österreichischen Staates; Bd. xxi. St. ii.*

THOUGHTS ON MEDICINE.

[Continued from page 809.]

SEE the critic take his measure and his balance; he measures you by his height, weighs you by his weight, and estimates you by his value; he has no other rule for his judgment. If, in writing, you show energy and fire, he says it is mere emphasis and declamation; if you display elegance he calls it tinsel and affectation; if you are simple and natural, he asserts that you fall into common-place; if you show learning, according to him it is pedantry; if you are sparing of quotations you are ignorant of what has been done before you. The magnifying glass of his malevolent criticism alters and distorts every thing. What is to be done, then? Wait. This great man, so difficult to be satisfied, takes up his pen, and wonderful to say! his subject is hacknied, his principles false, his logic pitiful. Add, that his style is incorrect, heavy, flat, and wearisome, and no one is ignorant that the style is the man.

A new idea can have no permanence, if passion, enthusiasm, and strong self-love, do not assist it; they are powerful and

active springs; the difficulty is to bring them into the service of the good, the useful, and the true.

General rule.—When the reviewer forgets the work, to attack the author, and to penetrate the sanctuary of private life, he ceases to be a journalist, and becomes a libeller.

We owe a portion of our existence to disease, as we owe the tithe of our life to misfortune.

How many diseases, pains, dangers, and infirmities, men would avoid, if they were fully imbued with that great principle of hygiene and of wisdom, that pleasure sometimes enters into the composition of happiness, but never forms its essence.

The town of Nancy gave fêtes to celebrate the recovery of its prince. "The Lorrainers struck two hundred gold medals with the arms of Nancy on one side, and those of M. de la Peyronnie on the other. He persisted in refusing to accept them; but not to disoblige such loyal subjects, he accepted an equal purse of silver medals." (*Eloge de la Peyronnie*, by Morand.) Suppose the same thing to occur at present, friendly reader, you have no doubt what would follow.*

There are nearly ten thousand organs in the human body, and each of them has a multitude of parts, which are themselves divisible, until we arrive at atoms subject to molecular affinities. Then setting out from this point, ascending from harmonies to harmonies, from one organic sphere to another, we arrive at the *ensemble*, the whole, the sensitive and moral unity, the *I*. This is man. But of what does this vital and plastic force consist? What is the hidden bond, the primordial element, which generates this surprising variety of actions? The unknown quantity in this problem has not been discovered. All the parts of the body have life, but not a *life*, and yet they converge towards this unity with an admirable concord; every faculty terminates and loses itself in the abstract and hyper-organic faculty of personality. By what means does nature effect this great phenomenon? The triple scale of ignorance still covers our feeble eyes. What problems to resolve! What

* The author means of course, that in the present day every one would take the gold. But do not immense competition and small gains almost force such conduct on the profession? To speak in our author's style, the hungry wayfarer snatches at a crab-apple, while the tenant of the gardens of Alcinoüs turns away, satiated, from peaches.—TRANSLATOR'S NOTE.

veils to lift! What depths to sound! You may now understand the splendour of Stenon's words: *Pulchra sunt quæ videntur, pulchriora quæ sciuntur, sed longe pulcherrima quæ ignorantur.*

You are irritated against a criticism; is annoys, it wounds you. Weigh it well, however; if it is by a fool, forget it; if it is by an envious man, forgive it; if it is by a severe friend, make use of it. In any case, remember that it requires as much talent to profit by a good critique as to be able to do without it.

OPERATION FOR STRABISMUS.

To the Editor of the Medical Gazette.

SIR,

I DEG to trespass on your attention with a few observations on the operation for curing strabismus, as simplified by my friend Mr. J. G. French, of the St. James's Infirmary.

That gentleman is the first surgeon that has effected any real improvement upon the process originally practised, if not devised, by Professor Dieffenbach. The abandonment, as recommended by Mr. French, of the numerous hooks employed by Dieffenbach, by Liston, by the French surgeons, and by others, in this country, has led to some important consequences: the pain of the operation is lessened, the labour of the surgeon is curtailed, and the after-treatment simplified.

I have tested Mr. French's modified method in four cases, and I feel bound to bear my testimony to its sufficiency. I shall not trouble you with a detail of these cases, which have succeeded perfectly, because they contain nothing of novelty. I shall merely state, in proof of their authenticity, that they were performed, respectively, in the presence of Mr. John Malyn, Mr. French, Mr. W. H. Smith, and Mr. Taylor. The way in which I proceeded in all these was the following:—The patient was seated on a chair in a moderate light; an assistant standing behind covered the sound eye with one hand, and with the other raised up the superior lid of the affected organ. The patient having been directed to turn the eye upwards and outwards, I snipped the conjunctiva at the under edge of the rectus, and passed a curved probe beneath the muscle: by depressing the handle of the probe the point was thrust forward, and appeared above the upper edge of the divided muscle, and by a cut of the scissors was enabled to emerge. The fibres were finally divided upon the probe.

The operation, thus abbreviated, consists of but three steps:—

First, the snipping of the conjunctiva.

Second, the introduction of the probe under the muscle.

Third, the cutting out of the probe.

The usual formidable notes of preparation are avoided. The probe which I employ consists of two stems placed parallel, at a distance sufficient for the point of the scissors to pass between. It is curved into a hook in the shape of a semicircle, of which the diameter is six lines. The pattern may be had at Savigny's or Fergusson's.

The improvement suggested by Mr. French is so obvious, that it must excite surprise that it did not occur to those wholesale performers who have been daily operating upon dozens of cases. Dr. Franz, the pupil of Professor Dieffenbach, has announced the success of his tutor in 250 cases. The pupils of Mr. Liston have not forgotten to din into the public ear the successive scores of cases which fell under the hands of their instructor. Other surgeons also have expended a vast deal of ingenuity and many shillings in the invention of hooks, scissors, and directors, and in attempts at otherwise improving the process; yet it was left to the plain and practical understanding of Mr. French to render the operation consistent with the simplicity and considerateness of British surgery.

If Mr. French has not been anticipated in his improvements either in Germany or England, still less has he in France, notwithstanding the especial patronage and instruction of M. Dieffenbach; at least if we may trust the announcement of the "Constitutionnel," the French Times.

That journal says, "Quant aux nouvelles et nombreuses opérations pratiquées à Berlin par M. Dieffenbach pour la guérison du strabisme, et dont cet habile chirurgien envoie régulièrement la relation *un peu monotome* à l'Académie des Sciences, M. J. Guérin publie à leur sujet quelques réflexions qui nous ont paru judicieuses. Il paraît que M. Guérin a amendé et perfectionné le procédé opératoire de M. Dieffenbach, et que cependant il a été moins heureux que lui, puisqu'en effet et de son propre, il n'aurait obtenu qu'une guérison *un peu parfaite*, sur quatre opérations d'ailleurs très sagement préméditées et habilement faites." If such be the result of M. Guérin's "perfectionnement," the sooner he abandons them, and adopts those of Mr. French, the better for his patients.

But according to the same journal, even M. Roux, the Achilles of French surgery, cannot boast of any great success. "M. Roux parle sans enthousiasme de l'opéra-

tion Prussienne, qu'il a lui-même pratiquée sans un succès très marqué. That M. Roux feels no enthusiasm on such a subject, only places him in more advantageous contrast with his confrères in this metropolis, where the eagerness for fame has been so overwhelming, as to threaten to break down the barriers between honourable practice and quackery. We have had the art of puffing practised in every form, from the sham "official reports" down to the puff direct of the newspaper paragraphs, and all equally unproductive of a single valuable suggestion.

One statement of the "Constitutionnel" deserves a remark: "Mais on ne se cache point on Angleterre, que cette operation ('la guérison du strabisme,') a d'abord été faite et conseillée par M. Stromeyer dès Juillet, 1839. If the English surgeons who set this report in circulation had, in addition to their smattering of French and German, known a little of their vernacular surgery, they would have known that this same operation of dividing the internal rectus of the eye was performed by Mr. Anthony White on several animals, as much as a dozen years ago, and recommended by him for the cure of strabismus in the human subject. Being a native suggestion, however, it was consistently neglected, until it made its appearance in a foreign costume.

Two facts which, previous to the appearance of Mr. French's letter in your journal, surgeons totally overlooked, at once point out the superfluity of the apparatus employed in this operation: the utter uselessness of the speculum, of the hook, for fixing the ball, and of the tenaculum for holding down the lower palpebra, as well as of the formidable bandage over the healthy eye; and these are, 1st, the fact that under every variety of ocular action, the rectus must always be within reach of the surgeon's probe; and 2d, the narrowness of the lateral diameter of the muscle, which is much less than the normal aperture of the eyelids in the waking condition, and makes all means for greatly depressing or raising them unnecessary.

The probe, when introduced underneath the muscle, should be held loosely, for occasionally the eye is drawn spasmodically outwards, and the probe, if held tightly, would plunge in consequence deep into the orbit, and occasion pain by coming in contact with various nervous filaments; but when held loosely it follows the course of the eyeball, and produces no pain whatsoever.—Apologizing for this intrusion, I am, sir,

Your obedient servant,

D. O. EDWARDS.

15, Cheyne Walk, Chelsea,
August, 1840.

CANCNUM ORIS.

To the Editor of the Medical Gazette.

SIR,

IN the report of my evidence at a coroner's inquest, in a case of cancrum oris, inserted in your journal of last week, I find it stated that *I was inclined to think that the disease was contagious*. As such is not the opinion expressed by me, nor that which I entertain, I shall feel obliged by your noticing the error.—I am, sir,

Your obedient servant,

T. B. CURLING.

1, Mount Place, L. H.
August 30, 1840.

WESTMINSTER HOSPITAL SCHOOL.

WE are glad to find that the Governors of the Westminster Hospital, at a Board held on the 25th ult., passed unanimously a resolution, to annex the Westminster School of Medicine to the Hospital, because we are convinced that their means of usefulness will be greatly increased. We are surprised that the Governors of that hospital should be the last in the metropolis to recognise that most important principle.

All that now remains, in the short space between this and October, is to appoint efficient men as lecturers, and they may be assured of respectable classes.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED
CERTIFICATES.

Thursday, August 27, 1840.

S. Thomson, Burton-on-Trent.—H. J. Glaud, Faversham.—J. Jerard, Castle Headingham.—R. P. Beardshaw, Leeds.—J. Paddon, Truro.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

Au gust.	THERMOMETER	BAROMETER.
Wednesday 26	from 57 to 71	29.95 to 29.99
Thursday . 27	52 71	30.00 29.96
Friday . . 28	57 73	29.97 30.00
Saturday . 29	58 70	30.08 30.80
Sunday . . 30	56 75	30.03 30.06
Monday . . 31	55 72	30.08 30.04
Sept.		
Tuesday . . 1	58 77	29.95 29.81

Wind S.W. on the 26th, and two following days; E. on the 29th; S.E. on the 30th; N.E. on the 31st ult.; and E. on the 1st instant.

The 26th and morning of the 27th overcast, with rain; afternoon of the 27th clear. The 28th, morning cloudy, otherwise clear. The 29th, generally cloudy. The 30th generally clear, except the evening, when a little rain fell. The 31st ult. morning cloudy, otherwise clear. The 1st inst. generally clear.

Rain fallen, $\frac{1}{15}$ of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE LONDON MEDICAL GAZETTE,

BEING A
WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

FRIDAY, SEPTEMBER 11, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY.

Delivered at the Westminster Hospital School

By BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISEASES OF THE SPINE, *continued*.—

CARIES, *continued*.—*Its Course and Treatment*.—CURVATURE.—*Its Nature, Symptoms, Causes, Prognosis, and Treatment*.

THIS disease may terminate in resolution, but it generally goes on; the skin becomes hot and dry, the pulse is quickened towards evening and after meals, and the patient gets weaker. After a very variable period, usually of some months, though it may occur in a few weeks, pus forms, and a tumor may be presented in the loins, the sides of the thorax, below the crural arch, and sometimes in the thickness of the buttock; according to the height at which the disease is seated, and according as the fluid has taken the course of the dorsal, the intercostal, the iliac, or hypogastric vessels and nerves.

To a certain extent other circumstances besides the extent of its accumulation, and its distension of surrounding parts, explain the course which the fluid takes; thus the movements of respiration dilate the lungs, and displace the abdominal viscera; from this results, not only a uniform resistance, which is opposed to an excessive development of the tumor in the thorax and abdomen, but also an alternate frequent impulsion which pushes the fluid towards the exterior. It is then directed towards points where it meets least resistance, and according to the structure of the region which it occupies, and particularly of the

parts which correspond to the contour of the tumor, it is directed either towards the posterior surface of the column; on one or other side of the ranges of spinous processes; towards the region of the axilla, or the thickness of the arm, following the course of the axillary vessels (Delpech); along the psoas muscle, towards the brim of the pelvis, and when the disease affects one or more of the first four lumbar vertebrae, this course is almost inevitable, the inguinal ring, the crural arch, the groin, the anterior superior spine of the ilium, the inguinal ring, (Brodie) the thickness of the thigh; forming tumors on the back, the surface of the chest, the inner side of the arm, the anterior and inner surface of the thigh, the scrotum, the labium, the perineum, (Ribes) the margin of the anus, the posterior or external region of the thigh, or below the glutæus muscle; in all of which places they may open spontaneously: they have opened into the spinal canal, have perforated the œsophagus, and the patient has vomited the pus; they have opened into the lungs, (Gooch and Cayol); and into the colon, (Wedemeyer.)

We then see at one of these points a painless, soft tumor, fluctuating from the first, over its whole extent; the colour of the skin is unchanged. When it is presented below the crural arch, and indeed in other situations, it partly disappears under pressure, and may be enlarged by pressure upon the abdomen, or by coughing; but the other characters of the tumor are so marked that it is impossible, with moderate attention, to mistake it for a crural hernia; but yet this error has happened: it has been mistaken for an aneurism, (S. Cooper) for a bubo, (Boyer, Wedemeyer) for a hernia, for an abscess by the side of the rectum, (Cooper, Ribes;) but generally these mistakes are consequences of gross inattention, and neglect of a proper interrogation and prudent examination of the patient.

The tumor enlarges, the skin is strained, and ultimately gives way, unless previously punctured. During the formation of these abscesses the symptoms of compression of the spine often increase, but when a spontaneous or artificial opening is made, and the pus is evacuated, they diminish or completely disappear.

When the abscess opens spontaneously, whether the opening continues, and admits air, and the cavity suffers the consequent irritation, or not, the disease is rarely cured; still, recovery is not impossible. But in the greater number of cases, especially where the patient is scrofulous, the pains become more acute, the pus becomes more fetid, and when there is paralysis of the bladder and the rectum, the urine, after distending the bladder as far as possible, runs over, as it were, incontinently; and to obstinate constipation, succeed involuntary dejections. The integuments covering prominent bones on which the patient rests become sloughy; the nervous, circulating, and digestive apparatus, are irritated, and the patient dies marasmatic. When these abscesses are opened spontaneously, and when, at the moment we are called in, air has already penetrated, there is usually little hope of cure; still, issues, appropriate internal treatment, and a regimen proper to sustain without exciting the patient, should be tried, however little chance of success there may be; for even though they do not completely succeed, they always arrest its progress, and retard the fatal termination.

Treatment.—The spongy texture of the bodies of the vertebræ is very favourable for the rapid progress of caries, and their deep seat is very unfavourable for accurate diagnosis at an early period; it often masks the affection until it has made considerable progress, and renders it inaccessible to all direct local treatment. From these circumstances it results, that as soon as the disease is discovered we are bound to suppose it is somewhat advanced, and that it requires very active treatment. When, therefore, an adult complains of having suffered a long time, in the region of the spine, a pain which was at first diffused, but is now concentrated—when a young child arrives at the period when it should walk, but presents feeble limbs, or more especially when after having walked it is no longer able to do so, this feebleness not depending on any apparent disease—it is necessary to examine the spine carefully, to ascertain whether any projection or gibbosity exists. We shall usually find this appearance; but supposing we do not, the existence of pain in a subject predisposed to the disease is a sufficient authority for active treatment. At the same time that we treat by appropriate means a

particular symptom or the general predisposition, the patient should be kept in the horizontal position. If there be much tenderness at any particular point of the spine it may be leeches; but without loss of time active counter-irritation should be applied to the immediate neighbourhood. Cameron appears to have been the first to rely much on the revulsive plan, and to have communicated to Pott the advantages which he had obtained from it. The best mode of applying it is to fix on each side of the gibbus, or the spinous process to which the pain corresponds, a large moxa, which, when the slough is thrown off, should be converted into an issue, into which some persons insert two, three, four, or more peas. It has been recommended that they should be kept open so long as the disease requires them; but you will often find that difficult, and the tendency to fill up can in many cases not be easily repressed. Besides that, I believe the discharge, after a certain time, to exercise no revulsive effect; that it becomes a physiological condition. I therefore prefer making caustic or moxa issues around the point, and healing them up; leaving always one slough undetached.

These are almost the only means which we can employ when suppuration has set in. If there be amelioration, if the feebleness of the limbs diminishes, it is not less necessary to continue those means. If there be any digestive disturbance, the egesta should be examined to ascertain that there is nothing abnormal about them. If the strength declines we must seek to sustain it by good nutriment, and quinine; if the bladder become sluggish or paralysed the catheter must be regularly used. Never attempt, by mechanical means, to lessen the deformity; this would be a fatal mistake, because you might prevent union of the bodies of the vertebræ, which is the only cure, or rupture that which has already proceeded to some extent; indeed the deformity is the patient's salvation. But it is indispensably necessary to preserve the horizontal position: as a means of facilitating this object it may be wise to raise the shoulder and pelvis so as to favour it. If much inconvenience be suffered the patient may lie on his side, or even on his belly; any particular position fatigues after a time, and therefore it is well to vary it. When abscesses present themselves, which they do at different periods, though usually six, eight, or ten months from the first pains—sometimes not more than as many weeks—in a case of Brodie's not until two years—there is much difference of opinion as to the course most prudent to take: some persons maintain that so long as they are not large they ought not to be meddled

with, because, under energetic treatment, such as has been alluded to, the caries is sometimes cured, the pus is absorbed, the abscess is resolved, and its walls coalesce. In some rare cases, the pus, after remaining long in its cavity, is converted into a substance resembling adipocire; and occasionally a long time may elapse before it opens spontaneously. Boyer knew a case where it was two years. Other persons advise that they should be opened as soon as they appear, by an oblique puncture, and as soon as the fluid escapes that the opening should be carefully closed; and that so soon as it is evident that the fluid is again collecting, which is usually from thirty-six hours to five or six days, that it should be again punctured. These punctures made in a tolerably healthy tissue soon heal, and no doubt very little air is admitted; but usually after the third or fourth puncture the opening remains fistulous, the pus becomes fetid; then the general health suffers, and the patient dies in the last stage of marasmus. Petit, of Lyons, advised that the tumor should be punctured with a very small trocar, or needle heated to whiteness, and the fluid abstracted by means of cupping-glasses. Even when the abscess is large these precautions are sometimes taken.

CURVATURE OF THE SPINE.

The spinal column may be curved at any point of its extent; and according to the direction which those curves take, they are distinguished; thus the lateral curvature is termed *Scoliosis*, the backward curvature is termed *Gibbus* or *Cyphosis*, and the forward curvature is termed *Lordosis*. Altogether the nomenclature is wanting in precision: thus the terms curvature, deviation, torsion, incurvation, gibbosity, inflexion, &c., are indifferently applied to this condition. I think Guérin's nomenclature much less objectionable; he calls all deviations of the column from its normal axis, either to the right or left, a lateral deviation of the spine; he reserves the term curvature for the different alternate arches which the spine describes in all deviations; from that the terms, first, second, third curvature, &c. He applies the term *excurvation*, or posterior deviation, to all projections of the spine directly backwards from the normal axis. The *excurvation* is regular or angular, according as the convexity is more regular or more angular. He calls it *senile* when it is the result of age. However, we usually find the terms commonly used in our country as sufficiently precise; I mean *lateral curvature* and *Pott's curvature*.

The spinal column is very rarely removed from its natural direction on one side only, but it almost always presents, at least, two

curvatures in an opposite direction: thus, if there be a more or less decided curvature in one direction, we shall almost certainly have another in the opposite direction.

It is clear that, in the different curvatures, the organs contained in the chest and abdomen must suffer change of position; and as the course of these affections is usually slow, we can readily conceive that in the end the viscera may take a position very different from that they ought to occupy, without having their functions sensibly interfered with.

I believe that these curvatures do not exercise any considerable influence upon the form of the pelvis, when they are not a consequence of softening of the bones, or rickets. This opinion was supported by Meckel (Manuel, par Jourdan, t. 1, p. 745,) upon numerous facts, but has been called in question by Joerg (Ueber die Verkrümmungen, &c. p. 26,) and by Choulant (Deas Pelvium, &c. p. 15,) who think that curvatures of the spine exercise a certain influence upon the form of the pelvis, although there be no general disease of the osseous system: they add, however, that this influence is greater when there is general disease, and when the curvature is manifested during infancy. According to them, as the vertebral column has four natural curvatures (one in the neck, convex forwards; one in the back, convex backwards; one in the loins, convex forwards; and one in the sacrum, convex backwards,) it follows that, when one of the natural curves increases under disease, all the other curvatures must increase also; and when a natural curvature takes a direction opposed to that which is proper to it, all the others must do so too. It is in consequence of these different changes in direction that the concavity of the sacrum increases or diminishes. In the lateral curvatures the pelvis will be contracted, and take an oblique direction, consequent upon the lateral obliquity of the sacrum.

When the deformity is fairly developed, its existence is sufficiently evident, and the simplest examination is sure to detect it; but it is when the displacement is slight that it is most important to ascertain its existence, for it is then more easily combated than when it has already exercised a baneful influence upon the functions of important organs. The complications frequently cause more difficulty than the original disease.

Mothers are ordinarily the first to perceive a change in their children's forms; their perspicacity on this point is admirable. It has often inspired delicate and ingenious observations; the solicitude which such a discovery excites is often supposed by superficial observers to be exaggeration. A great number of cases are

mistaken until they become very marked, because they have been in the first instance carelessly examined. A deplorable source of error is found in the pride of parents: we could scarcely believe it, if we did not often see it, that parents, in other respects very sensible people, will not see deformity in their own children; they are often wilfully blind; conceiving something disgraceful in a deformity, they think it impossible that their children can be thus afflicted, and they will tell you that none of their family have ever been deformed.

It is very common to refer particular attitudes to bad habits; it will be always wiser to ascertain whether there be no other cause. The attitude of a patient is generally a natural consequence of a want to distribute the burden of the body more equally. At the age when deformities commence, attitudes are usually the result of inspiration—of instinct: we may be sure, at this time, there is a reason for them; the patient may not know it, but it is our business to seek for it. Nothing can be more senseless than the punishment often inflicted in these cases. The burdens which may be attached to certain parts of their dress, the contrivances to prevent their moving this or that part, in the hope of preventing particular attitudes, are frequently unjustifiable. These attitudes should be regarded as indices requiring careful study; they are often sufficient to indicate deformities as yet too little advanced to attract attention, but yet in that precise condition when they can be easily arrested. We remark, for instance, then, that an infant whose spine is deformed, when he stands for some time, does not place both feet on the same line; one is constantly in advance of the other. Another remark, which is very interesting, because it may be made early, is the way in which the child sits down; you will often see such a child seek a low-backed chair, and so place itself that one arm shall be passed over the back, by which he gets a support for the trunk. This position you will find will be always the same; the same arm will always be used as a support. Another point which precedes the curvature is a constant pain, changeable in its seat, but sometimes in the side, above the breast, sometimes in the epigastric region. This pain has no known cause; its duration is pretty constant, its intensity variable, its periods of calm and exacerbation uncertain. We find no disturbance in the functions of the organs where the pain is felt; nothing calms it, nothing relieves it. It is accompanied by a slow progressive inexplicable degradation of the general health. This symptom should always induce you to examine the spine. Another symptom which should lead us to examine the spine is a

periodical asthmatic paroxysm, in children of from eight to twelve years. Great digestive disturbance is often presented in these cases. When these kind of symptoms occur, the necessity of examining the spine is absolute; we must not be satisfied with examining through the dress. Too much attention cannot be given where the diagnosis is difficult; and depend upon it, on your own account, this is the safe course; for the public, who do not know the difficulties, rarely pardon the omissions or errors of medical men in such cases.

Lateral curvatures occasion a difference in the height of the shoulders; the one is higher than the other; the body inclines to the side opposite to the curvature; one side of the thorax is bowed, the other concave: on the concave side we see, between the last false rib and the crest of the ilium, a fold, formed by the integuments; this fold increases in proportion to the curvature. The lateral curvature increases, there is a twisting of the spinous apophyses, the entire trunk is a little curved, the ribs are also displaced; those on the concave side approach each other; those on the convex side are most strongly curved behind, so as to cause a projection: most frequently the sternum is oblique, and drawn towards the concave side. If the curvature occupy the upper part of the spine, the position of the shoulders may be much changed. The curvatures which affect the inferior part cause much less deformity than those of the superior part of the spine. After a time other curvatures are formed in an opposite direction to the first which was developed.

When the affection is at its highest degree, the natural direction of the pelvis is changed, the iliac bone of one side is higher than that of the other, and, under the influence of causes which we have described as destroying equilibrium, the sacro-vertebral angle takes a vicious direction, and the superior aperture of the pelvis is more or less contracted. When the lateral curvature is carried very far, the viscera of the chest and the abdomen change their position, the thorax is contracted, the circulation of the blood in the lungs is more slowly performed, the respiration is more embarrassed, the digestive functions are deranged. These circumstances sufficiently explain the sickly state of the bodies of individuals affected with considerable curvatures.

In posterior curvature, I am not here speaking of Pott's, the spinous processes project backwards, the bodies of the vertebrae are thinned, and there is a concavity forwards, as we have already seen; the ribs approach each other; the sternum is bowed. The cavity of the thorax, lessened

in its vertical and transverse axis, is enlarged antero-posteriorly; the abdominal cavity is lessened; its viscera compressed. The affection is more rare at the loins than the back, but it is often presented at the junction of both. This curvature is common in old people, and is often a consequence of particular positions. If we interrogate old people presenting this deformity, we usually find that their daily occupation was such as to oblige them to sit, or stand, for hours in a curved position. It is not uncommon to see this condition in women of forty to fifty, who, after having worn stays all their life, leave them off at that time. The extensor muscles of the trunk, having long been without exercise, are no longer capable of supporting the spine. Again, rheumatism of the posterior muscles of the spine may produce this condition. The patient, being unable to contract those painful muscles, bends forward. (See fig. 1.)

Fig. 1.



It is not very difficult to chalk out a line of demarcation between this curvature and that which is a consequence of caries. The absence of pain in the first is an important difference. The disposition of the spinous apophyses at the level of the tumor is important. A curvature from caries is angular; that we are considering is rounded. At the commencement of Pott's curvature a single spinous process projects, afterwards others may follow, but the resulting curvature is unequal. In the curvature we are considering it is rounded, even from the first, and the pain, paralysis, and abscess, are usually all wanting.

The forward curvature is rare. In this affection the bodies of the vertebræ form an arch convex forwards; the spinous processes are contained in a cavity, directed backwards; they constitute an obstacle which prevents this kind of curvature from becoming so marked as others; still the pelvis is inclined forward, the sacrum is raised posteriorly, the pubis is directed downwards, the spinous processes are in contact, and sometimes united; the extensor muscles are shortened. We meet with this affection only in the dorso-lumbar and cervical region, and the symptoms it produces are not very marked. It is never other than partial. When the dorso-lumbar region is principally affected, the belly is larger, the viscera are pushed forward. Sometimes the lumbar prominence can be easily felt; walking then becomes embarrassed and vacillating. This affection seems to manifest itself usually in feeble rickety persons, with large heads, and muscles too feeble to support them; in persons sustaining weight around the loins; such as women who carry about the streets baskets supported by a strap around this region, or men who support organs in the same way.

Our more immediate object is to consider lateral curvature. It does not often affect the cervical region, when it does not depend upon disease of the vertebræ. When it occurs under other circumstances it is often, as we have already seen, a consequence of wry neck. The vertebræ of this region frequently participate in dorsal inclinations; but they rarely present a curvature distinct from that of the back. Bampfield states that there was such a specimen in the late Mr. Brookes' collection. It was the skeleton of a man in whom the first, second, and third cervical vertebræ, together with the occiput, were united and considerably thinned on the right side, and described a left lateral curvature without trace of rickets or caries. Still the dorso-lumbar region is the common seat of the development of lateral curvature.

The changes presented in cases of curvature are often very striking. In many cases, on the concave side, when the inclination is great, the intervertebral ligaments entirely disappear; in others they are much attenuated; the bodies of the vertebræ are also much thinned on the same side: the direction of the spinous process is more or less changed, its vertical surfaces becoming more or less inclined to the horizontal. In most cases the texture of these parts is not changed, unless there be general disease of the osseous system. Where there are several curvatures, the vertebræ which establish the transition between two curvatures participate to a cer-

tain extent in the deformities of both. These deformities of the vertebræ produce remarkable changes in the dimensions, direction, and configuration of the spine. The vertical height of the column is lessened; the interval between the head and the pelvis is, by so much, diminished, and the whole trunk is shortened. This may be inconsiderable in slight cases, but in aggravated ones the change may amount to a quarter, a third, or even a half of the total length of the spine: this is easy to understand, when we see that there is occasionally not more than a couple of inches between the two extremities of a curvature, comprehending seven or eight vertebræ. (See plate.)

Fig. 2.



As to direction, the spine describes curvatures, whose numbers, seat, form, and extent, vary with the case. The most frequent disposition is that in which the last cervical, the first, second, and third dorsal vertebræ, describe a slight curvature with its convexity towards the left side, followed by a much more decided curvature towards the right, which extends from the fourth to the tenth or eleventh dorsal vertebræ; and another, less decided, towards the left, which includes the last, or the two last dorsal, and all the lumbar vertebræ. The upper curvature is sometimes wanting; then that of the dorsal region usually commences higher, and may occupy a portion of the cervical region: in other cases the inferior curvature is more decided, and includes a greater number of the dorsal vertebræ; and the midway curvature is then less marked, and comprehends the remaining vertebræ of the dorsal region. We much more rarely observe a single curvature extending along the greater part, or limited to a particular region of the spine: it is still less common to see four successive incurvations, whether almost of the same extent, or whether two predominate over the others. The great lumbar curvatures are often accompanied by an inverse flexion of the two last vertebræ in their junction with the sacrum. The inclina-

tions of the middle dorsal region towards the left are more rare than those towards the right, in the proportion of about one to seven; the contrary is the case in the superior dorsal and lumbar regions. The curvatures are almost constantly directed in an alternating sense, and succeed each other uninterruptedly; beyond the limits of the deviation the column usually returns to its vertical direction. The cord of each curve is not always in the median line, and its convexity is occasionally turned upwards or downwards. The central vertebræ (in a curve) most removed from the axis of the spine, are at a distance varying from a few lines to six or seven inches. As to configuration, the two sides of the spine undergo opposite changes; on the convexity the transverse processes are removed and are divergent; the intervertebral foramina are enlarged: on the concavity, the transverse processes come almost or altogether in contact; the intervertebral foramina are lessened: these, with twisting, are the principal changes in configuration.

The thorax undergoes changes almost as great, dependent upon the curvature of the dorsal region of the spine. The ribs are unequal; those on the concave side are in more or less complete contact, sometimes imbricated, are thin and narrow, sometimes shorter, sometimes longer than those of the other side. The ribs on the convex side have characters directly the opposite to those we have described: separated by spaces larger than natural, frequently large and flat at their posterior extremities, or even their whole extent, the ribs in the convexity have, in marked cases, a diameter double or treble those of the opposite side. The dominant character of the thorax consists, then, in the irregularity which succeeds to its former symmetry; its total capacity diminishes, because it does not gain in one direction what it loses in another. The shortening of the spine lessens its vertical height, and its capacity is still further diminished by the projection of the inclined vertebræ inwards in most cases. When there is more than one curvature in the dorsal region, each exercises an analogous influence on the ribs, so as to constitute many gibbosities, although one usually predominates. The scapulæ follow the thoracic displacement; one is raised and pushed backwards by the convexity of the ribs; the other depressed, especially its anterior angle. The spine is nearer the first, and if the gibbus be great, the vertebræ are seated under the corresponding scapulæ. Anteriorly the clavicle of the depressed shoulder is ordinarily more prominent than the other; its sternal extremity particularly is pushed upwards and forwards.

At an early period in the progress of curvature the vertebræ implicated are still moveable, when more developed motion of the parts is much interfered with. The ribs on the concave side, pressed one against another, end by becoming immoveable. With age a junction or true ankylosis is often established between the deformed bones.

It frequently occurs in lateral curvatures that the other parts of the skeleton, the thorax excepted, present no analogous deformity. The pelvis is generally well conformed, when the limbs present no traces of rickets: the facts published by Sandifort, Walther, Meckel, Shaw, and others, are a proof of this. In rickets, the curvature of the spine, when it extends to the last lumbar vertebræ, almost always corresponds with deformity of the pelvis. The spinal cord is curved in nearly the same degree as the spine; but, even when the curvature is very great, compression and paralysis rarely occur. The lungs are pressed in when there is dorsal curvature: the heart is generally found in the concavity of the curvature; the aorta follows all the curvatures of the vertebral column; so do the cava and the azygos.

The capacity of the abdomen is diminished, like that of the thorax, by the shortening of the loins, and projection of the vertebræ into this cavity. The lungs, the liver, the spleen, and the kidneys, often present at their surface more or less deep furrows, produced by impression of the ribs, the vertebræ, or even the ilium.

Causes.—Curvatures may be determined by an original vice of conformation, and then they are congenital: they may be formed at a later period; they are then usually slowly produced, and often without pain. The rectitude of the body depends upon the antagonistic and regular action of the muscles, and the natural solidity of bones: let the bones of the spine lose their solidity, and let the different powers acting upon them press unequally, the equilibrium is ruptured, and curvature follows. The natural solidity of the bones may be lessened by rickets, by softening, by serofula, by syphilis, by inflammation, and suppuration. The muscular action preponderates over the natural resistance of parts, and those parts take the direction which the muscles give them. The equilibrium of the muscles is destroyed when one set becomes more active than another, or when one set is so enfeebled as no longer to offer the necessary resistance to the activity of another, which remains in its natural condition: this we see in cases of partial paralysis, and especially in certain professions. This cause acts most powerfully at an early period of life; we also see it in diseases of muscles, rheuma-

tism, &c. The action of the flexor muscles naturally preponderates over that of the extensors, and especially in the fœtus; therefore the greater number of curvatures are in the direction of the flexors.

A very general impression exists that rickets is the ordinary cause of that want of solidity upon which curvatures depend, but I believe the opinion to be erroneous. Curvature of the spine and ricketty limbs are by no means ordinary concomitants. Two-thirds of the persons who present curvature of the spine have no bowing of the limbs, or enlarged extremities, or softening of bones, or deformity of the pelvis: by far the greater number are perfectly independent of rickets. The softening of bone is, in a large proportion of cases, a first cause; but it is not necessary that the softening should exceed what it naturally is in the child. Until after the second dentition, the vertebræ, by their spongy character, and the quantity of blood which penetrates into them, offer no very marked resistance; the intervertebral substance is soft and flexible. However little the equilibrium between the two sides is disturbed, there will be an inclination to one side or another; by that inclination a certain compression is exercised upon the vertebræ and the cartilages, on that side; and the compressed side of the vertebræ will not increase in the same proportion with those of the other side; the inclination is generally to the right: why the inclination should be so generally to the right is a point differently explained by different persons. The older anatomists conceived it to be dependent upon the arch of the aorta, and probably there is some truth in this; some persons have conceived it to be dependent upon the use of the right arm. The inversion of the curvature in left-handed persons, and its persistence in cases of transposition of the viscera, are far from being constant. It is true that in Grisolle's two cases of transposition, the column had accommodated itself to the inverse direction of the aorta; but as to the arm we see many cases where the curvature has been to the left, in right-handed people, and *vice versa*.

A lateral atrophy of the spine, whether produced in the way we have spoken of, or in any other way, is the first cause of curvature; and this as much more easily occurs as the vital powers are feeble. An hereditary transmission or predisposition seems probable, for it is not difficult to point out different generations of deformed people. Weakly children, deprived of proper food and clothing, are the common sufferers; girls to greater extent than boys: and especially is this the case in those children who grow very rapidly. It is

also common during long convalescences, dentition, or too early use of the intellectual faculties; it is also apt to appear under the influence of certain mechanical causes: those which produce a continued or permanent inflexion of either side, particularly when the bones are prepared to give way; and this is especially seen in young girls, who, before puberty, are employed daily in carrying infants, and always upon the same arm, which is no less injurious to the child than the nurse, because one side of its pelvis is always more raised than the other. Sitting or standing long in one position, as in writing, or working with the needle; the habit of doing every thing with one hand, are very prejudicial. Again, girls at school, especially when weakly, are apt, in their various occupations, of writing, drawing, music, and needle-work, to sit a great part of the day in one attitude: fatigued with this position, they stoop; the mistress thinks she does enough in telling them to sit up. To escape this fault finding, they get into an attitude apparently straight, but in reality they incline to one side. This position, by diminishing the length of the spine, brings the base of the thorax nearer to the pelvis; their fatigue is lessened, and the attitude becomes habitual. If to that we add a predisposition, the absence of such exercise as would strengthen the muscles, the influence of stays, which worn early have increased the muscular debility, we cannot be astonished that curvature is most frequent in girls. I have no doubt that the greater use of the right than the left side of the body may have some influence in these cases; but if it were as great as some would have us believe, children who have lost an arm should be very crooked. An unequal development of the lower limbs has a much more real influence. Still, with regard to particular professions and particular attitudes, however various they may be, I believe that alone they are not sufficient to determine deformity; but they may unquestionably become very efficacious occasional causes, when other causes are at the same time in action.

Once developed, the tendency of curvature is to increase, but it is not commonly developed before the infant abandons the horizontal position; still, monstrous fetuses, with deformed spine, are not uncommon. In rickety children the curvature may appear during the first year, or by the sixth month; but where it depends on ordinary causes, it seldom appears before the sixth year, and often later, towards puberty.

ON

SECONDARY DEPOTS OF MATTER.

Illustrated by Cases, &c.

BY JOHN CHARLES HALL, M.D. F.L.S.

[Continued from page 809.]

CASE II.—W. —, æt. 23, was admitted for a simple fracture of the femur, and a slight wound of the scalp. The wound in the scalp became puffy in several places, into which free incisions were made. Typhoid symptoms came on; the skin became yellow, as in the last case, and the man died. Upon an examination of the body the two ends of the broken bones were found bathed in pus; there was also an abscess in the liver.

CASE III.—For some cause or other, (which I do not at this moment remember) a surgeon applied caustic to the scalp of a gentleman who was his patient, which formed a very large slough. Suddenly he was attacked with a set of very odd symptoms; the abdomen becoming very much enlarged, and he died. Sir B. Brodie opened the body, and found the intestines glued together with lymph. The bone of the head, over which the slough had been made, was inflamed and highly vascular, and the dura mater separated from the bone.

CASE IV.—A girl was admitted with an extensive wound of the pericranium, by which the bone was denuded. Typhoid symptoms came on, and the girl died. The local appearances were similar to those observed in the last case; the bone being vascular, and the dura mater detached: there was also a very large abscess in the liver.

CASE V.—A young woman died after a very severe injury of the head. The dura mater was here also found detached, and a large abscess encircling a simple fracture of the thigh.

We have now fully traced the effects produced by those injuries—have proved such injuries to be the exciting causes of the various purulent depôts discovered in parts far distant. But we call in vain to our assistance the aid of anatomy to draw aside the veil that conceals these phenomena. The peculiar construction of our textures, which our forefathers concluded allowed the fluids to wander from one part of the body to the other, as through a sponge—in one word, the

whole system of organism—is incapable of accounting for so extraordinary a circumstance.

An inflammation which seemed to have nothing to do with that now under consideration (phlebitis) has filled up the great void that seemed to separate the suppurating wound from a visceral abscess: a series of experiments appear to have clearly established this proposition,—that every foreign body introduced into the veins in the living subject occasions, when its discharge by the emunctories is impossible, visceral abscesses completely resembling those consequent to wounds and surgical operations, and such abscesses are the result of capillary phlebitis in these same viscera. (Translated from *Nouv. Bibl. Med.*)

The experiments of Cruveilhier are certainly very clever, and tend to throw some light upon the subject under examination. That we may rely upon them I have no doubt; for having taken the trouble to make some of them myself, I found what this gentleman has stated to be perfectly correct. I did not certainly try all of them, and for two reasons; first, because I had not sufficient time to devote to them; and secondly, I wished not, for the purpose of idle curiosity, to put numerous dogs to the most fearful torture. When any practical end can be gained by such means, we have an undoubted right to seize upon every source whence information can be drawn; but the truth of such experiments having been confirmed, it is wanton cruelty to torture poor brutes for no good purpose, nor can such deeds be too strenuously condemned.

We shall now conclude this part of our examinations, by recording a few of the experiments to which we have alluded, and making such comments as they seem to demand. It is a question of some interest whether suppuration ever takes place without the existence of previous inflammation, and Cruveilhier contends that this can never be the case; but collections which he describes as extraneous matter may form in various parts of the body without such parts having been attacked by inflammation. Dr. Thompson doubts, however, “whether these collections of matter ever form without inflammation, and is inclined to believe that in whatever texture or part of the body scrofula manifests itself, these inflammations will be found to exist. The phenomena of inflammation, both local and general,

are, it is true, modified by the existence of the scrofulous diathesis; but they are, I believe, always present in such a degree as to justify us in giving to them the name of inflammation, and in classing most, if not all local scrofulous affections, among inflammatory diseases.”—*Thompson on Inflammation.*

John Hunter observed, that pus does not irritate the peculiar surface by which it is produced, although it may be highly exciting to any other, and, therefore, that no suppurating surface of any specific kind can be kept up by its own discharge, for if this were the case, any sore secreting an acrid and irritable fluid would be kept open by its discharge, and would never be induced to heal; and this may also be said of many other fluids: thus the bile, the urine, and the tears, do not excite the particular parts, the glands or ducts by which they are secreted, and yet they are nevertheless capable of irritating any other part of the human frame. From this I think, then, that we may very justly draw the conclusion that when pus once enters a vein, once mingles with the circulating blood, whatever may have been its previous nature, whatever effect it may have produced upon the part where it was created, it now either has changed its condition, or, acting as a foreign body, becomes highly irritating to the particular parts to which it is applied.

“If,” says M. Cruveilhier, “any irritating fluid is thrown into the femoral vein of a dog in the direction of the heart, (which can be accomplished after a few of the valves are broken down), and the collateral veins do not convey the liquid into the circulation, the injection proves immediately fatal; the limb in 36 hours becomes swollen; and if the animal then dies, or is killed immediately, bloody extravasations are found in the substance of the muscles, and in the cellular tissue of the limb. The large veins are distended with adherent and coagulated lymph or blood, and the small veins corresponding to the extravasations are also full of concrete blood, while those appertaining to the healthy parts are free. If the animal survives the experiment, collections of pus replace those of blood, at the same time that pus is substituted for the coagulated blood in the veins.”

This physiologist next devoted his attention to endeavour to find out what became of the pus in local inflammation

of the veins, when such fluids became mingled with the blood. When, however, it was so blended, it was difficult to discover its presence, and therefore quicksilver was employed.

"If a large quantity of quicksilver be injected into the femoral or jugular vein, the animal will become exceedingly depressed, and perish in from twelve to twenty-four hours, in a state very analogous to that observed in chronic catarrh. The whole of the mercury will be found again in the lungs, which will not be inflamed, but gorged with serosity that may be pressed out of them. But if the quantity of quicksilver be smaller, the animal will survive the experiment for a longer period, and then there will be perceived an induration around each globule of the mercury; in a later stage collections of purulent matter may be discovered."

A variety of these experiments M. Cruveilhier offers for our examination, varied as they have been by him a thousand different ways, and always with the same result.

The liver being the seat of a particular system of veins, which veins are destitute of valves, and have numerous windings in the mesentery, he says, "I next drew out a knuckle of intestine, and injected quicksilver into one of the mesenteric veins. In a dog which survived this operation twenty-four hours, the liver was studded with red, superficial, and slightly prominent patches, of the colour of wine-lees, and its texture, when cut into on a level with these patches, presented the same colour to the depth of four or five lines. In the centre of each small red induration was a globule of quicksilver, a certain quantity of which had penetrated into the small veins. In another experiment on a dog which had an umbilical epiplocele, quicksilver was injected into a small vein of the omentum. In about ten weeks the animal was destroyed. The liver was studded with numerous yellowish tubercles, some of which lay near its surface, others in its substance, and each having in its centre one or more globules of quicksilver. Some of them presented two distinct strata; one of a tubercular substance at the circumference, the other of puriform matter in the centre, in the middle of which were the mercurial globules. These observations seem

clearly to prove that all extraneous bodies introduced into the general circulation are inevitably conveyed to the lungs, and such as enter the abdominal venous circulation as certainly proceed to the liver; these viscera constituting a barrier, which they pass not beyond, except in certain cases. These experiments, observes Mr. Cooper, solve one difficulty, which clinical observations alone could never have solved: "How, in the hypothesis concerning phlebitis, is the pus conveyed from the general venous system into the capillary system of the liver? Should not the pus stop in the capillary vessels of the lungs? It seems as if abscesses should only take place in the latter organs; yet experience proves that abscesses of the liver are very common after injuries and surgical operations, notwithstanding that the capillary system of the liver only communicates directly with the vena porta and the hepatic veins; but this objection is at once reduced to its proper value by the demonstration of that subtle liquid, quicksilver, passing completely through the general and capillary system of the liver when injected into the branches of the vena porta, and, in other cases, passing through the general and pulmonary capillary systems, or, what is still more convincing, pervading several times the different orders of capillary vessels."

Professor Cruveilhier considers it, therefore, to be clearly made out that the pus which is introduced into the blood is retained in some part or other of the capillary system; that its tendency is to excite every where capillary phlebitis; that this inflammation is more likely to take place in the lungs than any other part, next in the liver, and next in the spleen; in fact, it appears clearly proved that pus, like quicksilver, once taken into the circulation, may be detained in the lungs or liver, or any other part of the system; it then produces circumscribed spots of inflammation, and this proceeds more or less rapidly to a state of suppuration.

This certainly appears a much more rational way of accounting for the secondary depôts found in various parts of the body, after injuries of the head, and various surgical operations, than to suppose that they existed previously in the parts where they are discovered, and were excited to take on a new sphere of

action by some peculiar state of the system induced by the wound of the scalp, or the injury done to the bones.

We have been led already to discuss this subject at greater length than we at first intended. There is, however, another query which must, if possible, be answered, viz., why do not visceral abscesses take place in cases of copious accumulations of matter, as in chronic pleurisy and peritonitis? and, secondly, is a wound necessary to their development? Quesnay has noticed a great difference in relation to consecutive effects between abscesses of long standing and the suppuration from recent wounds. Now to what are we to trace this difference? Are we to conclude that absorption of pus takes place in the one and not in the other? We know that a large abscess, the opening of which has been delayed, sometimes disappears, its fluid contents having been absorbed and taken into the system; yet it appears that the constitution does not suffer, and that this extraneous matter is thrown off by the various outlets of the body; therefore it would certainly appear that there is a very considerable difference between the effects produced by the introduction of this fluid at once into the circulation, and the introduction of similar matter by previous absorption.

M. Cruveilhier, in conclusion, adds, that what M. Dance proposed as a conjecture he has proved to be true,—that in several cases of “wounds of the head the veins of the diploe have been found purulent, and this state co-existing with numerous abscesses of the liver and lungs. Several convincing preparations of this were presented to the Anatomical Society, and at the present time it may be announced as a demonstrated truth, that, in cases of wounds of the head, the visceral abscesses of the liver, the lungs, and the spleen, are the consequence of phlebitis, and more especially phlebitis of the diploe; but the observation that inflammation of the veins of bones is a cause of visceral abscesses applies not only to the veins of the diploe, but to all the veins of bones; and I lay it down, as a general proposition, that phlebitis of the bones is one of the most frequent causes of visceral abscesses after wounds and surgical operations implicating the bones.”

This conclusion is at any rate as rational as any we can come to, and far more so than many of the theories

that have been from time to time advanced. The subject, however, is overshadowed by clouds and difficulties that the scalpel of the anatomist cannot break through. It is surrounded at present by a veil that human talent and understanding in vain endeavour to penetrate.

But our examination has led to some satisfactory results, inasmuch as we have discovered some of the more frequent causes of phlebitis. We are obliged to extract blood from the arm, but we are not obliged to induce death by passing a thread round a vein, or by breaking down newly-formed adhesions with a silver probe; and therefore, although unable to trace the disease through all its ramifications, we nevertheless are able to discover some of the more frequent causes producing it, and if we avoid them not, we are not only willfully blind, but culpably negligent also, and answerable for the lives we thus destroy. But this leads us to consider next the treatment of that peculiar state of the system which we have thus considered, and which we have found to arise after injuries and operations.

We have divided inflammation of the veins into two stages: first, adhesive inflammation, and second, a more advanced period comes on, when we find that this stage has passed away, and the suppurative process commenced. This view of our subject will be found of practical importance in our prognosis. I have not, be it remembered, spoken of inflammation of the veins arising without any apparent cause; traumatic phlebitis has more particularly occupied our attention; but in the *Cyclopædia of Practical Medicine*, Dr. R. Lee has taken up this part of the subject in a manner that leaves me nothing to say; in a manner that will amply repay an attentive perusal, and from his long and patient examination of uterine phlebitis, his remarks are entitled to the respect the opinions of this gentleman always demand. We may, however, be allowed to say that uterine phlebitis is known to be one of the worst forms of puerperal disease, and that, next to inflammation of the veins from wounds, one of the most common cases is phlebitis of the lower limb, consequent to uterine or hypogastric phlebitis; but this may arise under two distinct conditions of the body:—

1st. After parturition.

2nd. In cases of cancer of the womb.

We have stated the division here made is of practical importance, inasmuch as it is only during the first or adhesive stage, during that very early period of the affection when the blood is just beginning to coagulate within the vessel, that the cure can be attempted with any reasonable hope of success; for when the second stage comes on, when pus is formed and introduced into the system, medicine is of little avail; at least, all the remedial agents with which we are yet acquainted. Our treatment must be both local and general; copious bleeding, both with the lancet and with leeches, cold lotions to the part, and the free administration of calomel and opium. This is all we know at present of the treatment of the disease; but when the second stage comes on, the lancet and leeches can do no good. The quick and feeble pulse, the brown tongue, the cold wet hands, the muttering delirium, point out what it will be proper to administer. Wine, brandy, and then opium and anionia, will be the best medicines; clysters of strong broth must be thrown up, and every means taken to support the declining powers of life; but they hold out little or no hope of success, and in spite of all we can do our poor patient is hurried to the grave.

There yet remains one point of practical importance in the treatment of phlebitis that must not be overlooked, as it is important to know at what period we are to give up extracting blood. We answer, so soon as the second stage has commenced. True, I may be answered, "by taking away the blood you remove also a portion of the poison." Granted; but in taking away the blood you also lessen the powers of reaction, and the mere taking away of this fluid does not prevent the secretion of pus, which goes on as rapidly as ever. Now when a poison is once introduced into the system, as in the bite of a viper or the rattle-snake, the vital powers are shortly reduced to a very low ebb, and it certainly cannot, in such cases, be the rule to take away a very large quantity of blood. The first stage, then, of phlebitis over, so far from reducing the animal powers, we must endeavour, by every means in our power, to strengthen and support them, for by so doing, although we may not be able to preserve life, we undoubtedly prolong it, and in lengthening the span of human exis-

tence we most certainly are doing our duty.

We have now very carefully collected numerous facts tending to explain the subject we have attentively examined, and, without offering any very decided opinion, we leave the reader to examine the evidence before him, and from it and the book of nature he must draw his own conclusions; at the same time we venture to suggest that the subject most unquestionably offers a very wide field for discovery, and will doubtless amply repay any time that may be spent, any trouble that may in after life be devoted to exploring it.

7, Bath Place, Kensington,
August 1840.

AN INQUIRY INTO SOME OF THE CONSEQUENCES AND CAUSES OF FAILURE
OF THE
NEW OPERATION FOR THE CURE
OF STRABISMUS OR SQUINTING.

By E. W. DUFFIN, Esq.

Surgeon.

[For the London Medical Gazette.]

THE observations hitherto published on the division of the tendon of the internal rectus muscle of the eye for the cure of obliquity of vision, have been principally confined to the various methods of performing the operation, or to the suggestion of some new instrument to facilitate the accomplishment of that object.

The few cases thus far reported have been all so highly coloured, and so remarkable for their complete success, that, were we to credit implicitly their various authors, we should be led to the happy conclusion that failure is next to impossible, even in the hands of the most unskilful; and that in no instance will any visual deformity remain when once this devoted tendon is severed from its attachment to the eyeball. That it is a very scientific, beautiful, and highly satisfactory operation, in dexterous hands, no one can deny, perhaps the most so of any in surgery; but that cases both of complete and partial failure are of daily occurrence, though vaunted as successful, will, I imagine, be readily conceded by every candid surgeon whose field of observation has been sufficiently extensive to enable him to arrive at any really accurate, practical, and legitimate conclusions on

the subject. Indeed, so far from being universally successful, there is too much reason to fear that the operation will, ere long, fall into unmerited disrepute, in consequence of the imperfect and injudicious manner in which it is often performed, and the inauspicious results that have been occasionally observed to proceed from it.

To divide the tendon of the adductor oculi really well, and to liberate the eye with *certainly* and in an *efficient manner*, so as to secure the utmost benefit capable of being conferred, at the smallest possible cost of suffering and inconvenience to the patient, requires much more dexterity, neatness, and address, than is commonly believed. At first sight the simplicity of the operation is such, that almost every one is induced to attempt it, but comparatively few succeed to the full extent, in conformity with the principles just inculcated. To attain this delicacy and excellence, it is essential that the surgeon should perform the operation a vast number of times. That the first attempts, therefore, of the unpractised almost invariably prove only partially successful, cannot surprise us. I have myself operated one hundred and seventy times, and assisted others to an almost similar extent, as well as had opportunities of examining a variety of cases operated upon by individuals of every degree of talent, and feel satisfied that the statements I make will be found correct by every impartial inquirer. Many of my own early cases were only partially successful, and some of them were decided failures.

The original obliquity of vision, it is true, may be removed; but if, in its stead, there be substituted a staring vacant projecting eye, of apparently disproportionate size, or a disagreeable leer, or if a mere alteration only in the nature of the obliquity be effected, it is very questionable how far the expression of the eye is bettered by the change.

When the operation is imperfectly performed, a few fibres of the tendon, perhaps, or some apparently insignificant band of fibrous adhesion having escaped the scissors, the patient loses the power of turning the eye horizontally inwards, so as to bury the cornea in the nasal canthus to the same extent that he could do previously, and thus the inexperienced may be misled. If, in

like manner, in his effort to accomplish this movement, it be found that the patient is still capable of directing the pupil either upwards or downwards, and only slightly inwards, we may rely upon it that the operation is incomplete, and that when the eye is left at rest, this modification of the original evil, will, in a minor degree, be found to persist. Now, the operator being satisfied, from the extent to which he may have laid bare the sclerotica, that he must have divided the whole of the tendon of the adductor, often erroneously concludes that this slight obliquity arises from sympathy, and that, in the course of time, it will entirely disappear. But unless we can imagine that the unsevered parts will gradually relax, or become elongated, it is impossible that the eye-ball can ever emancipate itself thoroughly from its confined position. I have lately examined several cases that were operated upon, when this mode of relieving strabismus was first practised in this country, and do not find that time has thus far effected any amelioration, nor do I think it at all probable that further improvement will ever take place; but the contrary.

When the operation is complete in every respect, the patient is wholly incapable of directing the pupil of the eye beyond the centre of the orbit, either in a horizontal or oblique line.

In the course of a fortnight or three weeks after the operation, if the tendon has been simply divided, and not disturbed or displaced by pushing the muscle back into the posterior and lateral part of the socket of the eye with the handle of a scalpel, as has been recommended by some surgeons, it appears either that a new insertion of the muscle takes place, so that the patient recovers, in a very considerable degree, the power of directing the pupil towards the nasal canthus, or that certain of the other muscles, by a concurrence of action acquired by the natural efforts to render vision single, enable the patient to perform this movement. If any reunion take place between the divided tendon and sclerotica, and experience proves that this does happen, the fact that it can be established without return of the original evil is very important, and militates against the practice of displacing the muscle, as above stated, after its attachments are separated.

These movements of the eye upwards and inwards, or downwards and inwards, have been noticed by Mr. Liston, Dr. Franz, Mr. McMurdo, and indeed by every other operator, each of whom has explained it on a different principle. The theory which is most correct, therefore, remains to be proved by future inquiry.

In the report of Mr. Liston's cases, in the number of the *Lancet* for July 18th, of the present year, Mr. Ancrum observes, "In some instances, after the internal rectus has been cut across, the patient possesses the power of turning the eye inwards and downwards; this arises from contraction of the inner border of the inferior rectus." "Mr. Liston," he continues, "is in the habit of partially or completely dividing this muscle in all these cases." Now I do not by any means call in question that in some few instances it may be necessary to divide the inferior rectus partially or completely, because I am satisfied that this muscle may occasionally be implicated in the production of the deformity, as well as the adductor. But when, after dividing, as I have thought, completely the rectus muscle, and the patient has still retained the power of directing the eye downwards, and a *little inwards*, I have always found, on instituting a very careful examination, that a few tendinous fibres, or a band of adventitious cellular attachment, generally situated above the tendon of the muscle, still remained unseparated; and on dividing these the patient could no longer direct the pupil to the nasal canthus, nor carry it beyond the centre of the orbit. It is truly astonishing how very small a portion of this fibrous adhesion remaining unseparated is sufficient to mar the finish of the operation. These fibrous bands or digitations are sometimes seated very far back, even beyond the greatest diameter of the eyeball.

In the dead eye the cellular tissue is so delicate, lax, and unresisting, as to be scarcely appreciable. Indeed, it is with difficulty we can imagine it capable in any way of contributing to the deformity. When endowed with life, however, the bands formed by it are very powerful agents in retaining the eye in its unnatural position, and offer considerable resistance to the scissors, on being cut. It would seem that these bands proceed from condensation of the cellular tissue connecting the muscle

with the sclerotic coat, and which gradually adapts itself to the shortened state of that muscle. In some instances we find them strengthened by the effects of inflammation occurring during childhood; and in numerous examples it is the supervention of this apparently unnatural adhesion that renders the strabismus permanent.

In the first instance there can be little doubt that the affection depends on muscular spasm by no means necessarily persistent. I think, moreover, I have observed this adherent fibrous character of the submuscular cellular membrane to be more extensive and marked in persons who squint most. The movement of the eye downwards and inwards then, when the patient makes an effort to direct it to the inner canthus after the complete division of the tendon of the adductor, arises, I apprehend, from the natural action of the inferior rectus muscle, whilst the eyeball is still partially bound down by the tendinous bands of attachment alluded to, and that all we have to do, ninety-nine times out of a hundred, in order to succeed in perfectly rectifying this diagonal and abnormal movement of the globe, is to carry the dissection sufficiently far to separate completely these adherent fibres, however far back, high up, or low down on the sclerotica, they may be seated. I have met with this feature in the course of the operation in very numerous instances, and have always overcome it by the means just stated.

In no case have I ever cut the fibres of the inferior rectus; and in none have I ever dreamt of cutting the superior oblique muscle, as Dr. Franz informs us he has done, in order to remedy a position of the eye *upwards* and *inwards* the reverse of that we have been considering. Dr. Franz, however, it appears to me, has deceived himself in this respect. Indeed, I do not believe that any one has yet divided either of the oblique muscles, or that such an extension of the operation will ever be necessary. If we consider the following statement of Dr. Franz attentively, I think we shall be disposed to doubt whether he divided the superior oblique muscle, or only some unusual tendinous expansion or fibrous adhesion, such as above described. Indeed, the manner in which he relates that he accomplished the undertaking convinces me

that it could not have been either the muscle or its tendon which he cut. "I proceeded," says he, "to the operation, and carefully and entirely divided the internal rectus muscle, as in all my former cases. I now removed the hook from the conjunctiva, and leaving the eye at rest, after the lapse of a few minutes I examined its state again, when I was not a little surprised to find that the division of the muscle had not proved efficient, for although the inversion was certainly modified, the eye was yet turned upwards and slightly inwards.

From the direction in which the eye now stood, and its movements obliquely upwards towards the glabella, I was induced to think that the present state of this eye, the internal rectus having been entirely divided, would be well adapted for an experiment to investigate the true action of the oblique muscles; and as the patient bore the operation with very little inconvenience to herself, I determined at once to divide, first the superior oblique, in order to convince myself whether the present direction of the pupil depended actually on the action of the inferior oblique only, and then to divide the inferior oblique likewise, if the direction of the pupil should require it. I passed the hook again through the conjunctiva for drawing the eye outwards, and, without enlarging the wound in the conjunctiva, passed the curved scissors under this membrane, cutting through the adipose and cellular tissues with the blades of the scissors *so directed as to meet the tendon of the superior oblique*, which I soon distinctly felt between the blades, and divided, as was proved by the resistance and the peculiar sound with which the division of a tendon is always accompanied. On removing the hook again from the conjunctiva, and carefully examining the eye, I was not a little surprised to find that it was now perfectly straight, the pupil occupying its proper position. The division of the inferior oblique was, therefore, not requisite. The patient could not move the eye inwards, but in all other directions the movements were free, (MED. GAZETTE, June 24, 1840.) Now it occurs to me that it would not have been so easy a matter to arrive at the tendon of the superior oblique through an opening made in the conjunctiva at so great a distance from it. It might

have been possible for Dr. Franz to have divided the second belly of the muscle within a short distance from its transit through the trochlea attached to the frontal bone; but he informs us that he did not cut in that direction, but "*with the scissors so directed as to meet the tendon*:" hence he must have been at least three-fourths of an inch distant from the only point at which he could have cut the muscle by such a proceeding.

To have divided any part of the tendon by passing the scissors through the wound already made in the conjunctiva was next to impossible. Their points must have travelled over nearly one-half of a sphere, and been lost to the view of the operator long before they reached the object they were to cut. In my mind there is no doubt that after severing the principal band of tendinous fibres, by which the adductor is inserted, Dr. Franz encountered an adventitious band of fibrous attachment, such as I have already described, seated so high up, that he was led to consider it the tendon of the superior oblique. From what I have myself experienced, I can very readily imagine any one falling into this error.

14, Langham Place, Regent St. ;
1st September, 1840.

[To be continued.]

ON THE PATHOLOGY OF STRABISMUS.

BY EDWARD HOCKEN, ESQ.

[For the London Medical Gazette.]

As the subject of strabismus has of late been made of considerable importance, by the attention it has received in regard to the performance of Dieffenbach's operation, it has appeared to me worth while to investigate narrowly its pathology, to be thus enabled to lay down some practical rules why, when, and where it may be performed with reason, and every chance of success, provided that other circumstances present no impediment.

Taking a general view of strabismus, we may infer that all forms are originally dependent upon some lesion of innervation of the orbital nerves, of the third in convergent and oblique squinting, and of the sixth in divergent: the

lesion itself being in most cases excess, in some few a deficiency of innervation, thus producing either excessive or deficient action of the recti muscles. Now this derangement in the functions of the nerves of the orbit may be slight in kind, and transitory in duration, depending on excitement of the general nervous system, as in spasmodic strabismus, or, on the contrary, severe and permanent, as happens from numerous exciting causes; then, under these circumstances, from increased or diminished vital attraction between the capillaries and the affected muscles, changes are brought about, rendering the disfigurement independent of the nervous condition; the muscles, in the case of excessive innervation, becoming hypertrophied, or from the contrary condition, namely, defective innervation, atrophied, enfeebled, and, perhaps, softened. These remarks would scarcely apply to congenital cases, where the affection would probably depend on original lesion of conformation, or muscular condition; being connected or not with congenital amaurosis, obliquity of the orbit, or other defects of the eye-ball or lids.

Now, before proceeding to consider the pathology in detail, it may be advisable to make an enumeration of the principal exciting causes: these will be found to be numerous, and frequently complicated. Strabismus may be hereditary or congenital, may originate from imitation or habit, from improper education of the eyes, abdominal irritation, blows on the head, blows and other painful impressions on the eye, wounds of the orbit, various disorders and diseases within the encephalon, long retention of the head in one position, disparity of vision in the two eyes, disturbances of the nervous system, ulcers on the cornea, opacities of that tunic, the aqueous capsule, and lens, which partially obstruct vision, and, lastly, certain conditions of the pupil.

Strabismus, from these various exciting causes, may be reduced to the following pathological leadings:—1st, from affections of the brain; 2dly, abdominal disturbance; 3dly, affections of the general nervous system; 4thly, from idiopathic conditions of the orbital nerves and muscles, unconnected with disturbance in other organs; 5thly, and lastly, from congenital conformation, complicated or uncomplicated.

1. *Affections of the brain.*—The affections of the brain which produce strabismus are very numerous, and may be either functional or organic. The condition itself may be inflammatory: thus squinting occurs in the course of acute or chronic encephalitis, general or partial, it is frequent in the advanced stages of hydrocephalus, or may derive its origin from organic changes, the consequences of inflammatory action, or somewhat analogous processes, as in softening, induration, atrophy, hypertrophy, &c. Again, the pathological cause inducing the strabismus may consist of organic disease situated within the cranium; as simple or malignant tumors of the brain or bones, fungous growths, thickening and other tumors of the membranes, exostosis, and other diseases of the cranial bones, and, lastly, diseases of the vessels.

The affection may be symptomatic of cerebral congestion, this being either active, passive, or mechanical; apoplectic attacks, the disordered circulation preceding or producing it and the subsequent effects. Strabismus may also originate from disordered circulation arising from anæmia, and the derangement of function induced in the hydrencephaloid disease; to this head perhaps we may also refer the irritation of teething.

The last class of cerebral derangements that I shall mention is that induced by injuries of the head—namely, simple blows, unattended with any other marked symptom, the effect of concussion or compression, or from wounds or other injuries of the cerebral nervous matter.

2. *Abdominal disturbance.*—The derangements of the abdominal viscera producing sympathetic strabismus are usually functional, being either acute, gastric, or gastro-enteric dyspepsia, produced or connected with hepatic derangement and morbid biliary secretion, or from irritation of the gastro-intestinal mucous surface; on the contrary, the indigestion or biliary disturbance may be chronic, and, in children, frequently depending on worms, or atonic dyspepsia, may be complicated with their presence, and, finally, the combination of symptoms may indicate uncomplicated strumous indigestion.

3. *Affections of the general nervous system.*—These may consist of, first, simple excitement second, derangement

from the presence of either the exciting or depressing passions; third, from a condition of permanent debility and irritation, induced by long-continued and excessive use of intoxicating substances—as alcohol or opium.

The influence of the first form, namely, simple excitement, is seen in cases of spasmodic strabismus; in the most marked forms of which the direction of the axes of the eyes is, during ordinary circumstances, quite natural; but the deformity becomes apparent, and the eye-ball is obviously drawn in one particular direction from exciting occurrences, or from intense application or employment of the organ. Even in less marked cases, where there is slight but permanent deviation, it is frequently increased considerably when the patient is conscious of observation, or is exposed to circumstances which hurry and derange him.

In the second division of squint from affections of the general nervous system, this latter is greatly but temporarily disturbed: we see this form most frequently in children. Under this head we must include fright, fits of passion, fear, anger, the irritation of dentition, (in which last the disturbance is more prolonged, and acts especially on the brain) convulsions, &c. Cases are on record where the attack was occasioned by a violent fit of crying, convulsions from different causes, a sudden fright, as from forcibly bathing children, notwithstanding many expressions of terror. Mr. Middlemore has observed it to occur from the application of a blister behind the ear; but these cases never lasted any length of time, or were in any one permanent. In some of these forms of strabismus I think that it is not improbable that partial disturbance of the cerebral circulation is induced, or some effusion of serum or blood takes place. I have seen some cases of the third and last form of nervous disturbance, where squinting, with confused and double vision, was thus produced.

4. *Idiopathic conditions of the orbital nerves and muscles, unconnected with disturbance in other organs.*—This division of the pathology of strabismus includes all those cases where an alteration is produced in the natural condition of innervation, followed by change in the nutrition by strictly local causes, and it includes, first, idiopathic lesion of innervation; second, excessive use of

certain orbital muscles, however produced; third, painful local impressions on the globe.

The orbital nerves are themselves subject to disease, complicated or not with other affections of that part; thus, there may be enlargement or atrophy of the nerves, or hypertrophy of the neurilemma, and absorption of the nervous matter; the nerves may be compressed or involved in orbital inflammation, or organic disease. The nerves or muscles may be injured in wounds of the orbit.

An increase of innervation, followed by hypertrophy, may attend the excessive employment of any of the orbital muscles, whilst their antagonists become atrophied from disuse. In this manner we can easily account for strabismus originating in imitation or habit, improper education of the eyes, long retention of the head in one posture, disparity of vision, opacities of the cornea, aqueous capsule, or lens, and some malpositions of the pupil.

In the case of disparity in the vision of the eyes, the organ which is imperfect in its retinal functions interferes with the accurate use of the other; and here nature sets about a process to rid herself of this annoyance: the imperfect eye is turned out of the axis of vision by an increase of action in one of the recti muscles, and this, in time, becomes habitual, and the then natural condition of muscular action, the one muscle being increased, the other diminished in bulk; but even here the normal direction may, in most cases, be temporarily restored by the patient's efforts whilst the sound eye is closed. In those forms of squint depending on corneal and other opacities, and on malposition of the pupil, there is modified muscular action to adapt the eye to receive the due impression of light which the situation of the opacity or the pupil would otherwise have prevented.

An ulcer of the cornea may be the first originating cause of strabismus, since here the pain attending its progress is relieved by turning the eye completely away from the influence of light, and, also, as Dr. Mackenzie has explained, by easing the friction of the ulcer in the natural movements of the organ. The increased and irregular muscular action thus produced is attended with a squint, which, by constant repetition, at length becomes habitual, as in the former cases.

The third division of this pathological head includes the effects of painful impressions on the globe, which originate irregular innervation and muscular action. We find that even the application of irritating and stimulating substances to the conjunctiva suffices occasionally to excite this abnormal action; especially, of course, in predisposed individuals. Blows on the eye may also have the same effects, or the influence of a sudden glare of light on the retina. Dr. Mackenzie has narrated an instance in which the strabismus was occasioned by the injection into the eye of the essential oil of orange-peel, causing considerable pain and smarting. Can the communication subsisting between the third and fifth nerve, through the medium of the lenticular ganglion, have any thing to do with these cases, or with the production of strabismus from dentition?

5. Congenital Strabismus.—This includes two varieties, viz: complicated and uncomplicated forms. In the first it may exist in connexion with arrest in the development of some part of the brain, being connected with its own peculiar symptoms, with congenital amaurosis, partial cataract, or organic defects of the eye or orbit; in the second the squint is the only morbid condition, and then we must suppose that there is congenital contraction and hypertrophy of some muscle, with atrophy of its antagonists—similar, in fact, to what occurs in the varieties of "Talipes."

Pathological Anatomy.—This has pointed out nothing more to elucidate the pathology than what we should *à priori* assume, namely, the altered condition of the muscles, the various morbid changes within the cranium, and the pathological conditions within the orbit already mentioned.

In a case operated on by Mr. B. Lucas the muscle was unusually developed; it was fully twice as large as he expected, or as anatomy reveals it to be; it was also powerfully contracted, giving it a rounded appearance, and was very red and vascular, which accounted for the hæmorrhage.—*Lancet*, vol. ii. 1839-40, p. 523.

Having reviewed the pathology, we may now with confidence speak of prognosis, and thence draw some practical aphorisms for the performance of Dieffenbach's operation.

Prognosis.—In forming a prognosis

we must be guided entirely by the knowledge we are able to obtain of its exciting and proximate causes, the preceding and accompanying symptoms, their duration and complications. Strabismus from organic cerebral disease, disparity of vision, partial opacities of the cornea, aqueous capsule, or lens, and displacements of the pupil, are not adapted to the performance of the operation, and are generally unfavourable under any treatment, unless where opacities are naturally removed in young persons, or where operative measures succeed in partial cataract or displaced pupil. The following may be enumerated among the favourable cases, frequently yielding to mild treatment during an early period of their existence, or offering favourable chances of success by the operation, when they have by long continuance become habitual:—Strabismus from abdominal irritation, from habit and imitation, improper education of the eyes, painful impressions on the organ, spasmodic squint, and other forms from the disturbance of the general nervous system; long retention of the head in one position, ulcers of the cornea, and strabismus from functional disturbance of the brain; to these we may add uncomplicated and some cases of complicated congenital squint.

The theory of the operation is this—that when we divide the hypertrophied muscle its weaker antagonist is, for the time, the only acting power; hence it has been surmised that the eye ought to assume an opposite displacement to the habitual squint; but experience disproves this, at least for any length of time, for its contraction serves only to restore the organ to its normal direction, in harmony with its fellow. During the healing of the divided tendon the muscle originally weak gains strength and volume by its increased exertions, whilst the hypertrophied muscle loses both, never again to recover them in the prior degree, and, at the same time, the muscle previously contracted becomes elongated, since it is united whilst the eye is retained in its healthy direction by its antagonist. Hence the principle is the same as in the cure of the varieties of Talipes, &c.: here the division of contracted tendons allows of the placing of the abnormally situated parts in a right direction and healthy situation, aided by, and the situation maintained

by suitable mechanical measures, so that reunion of the divided parts takes place whilst they are thus situated, and permanent elongation is insured, at the same time that muscles, previously atrophied from disuse, are again, from the change of position, called into active service, and in this way the parts are restored to their due balance of strength and appearance, provided that the osseous system admit of such subsequent changes. In two cases operated upon by Mr. B. Lucas, he had an opportunity of ascertaining what became of the muscle after its division. "After having made," he says, "the incision of the conjunctiva in the usual manner, I clearly saw the mark of the original attachment of the muscle in both cases, and a short distance behind this point (from a line and a half to two lines) I found the muscle adherent to the sclerotic."—*Loc. cit.* p. 525.

Finally, I may lay down the following aphorisms to be kept in mind in the treatment:—

1st, That strabismus depending on disparity of vision, produced by some variety of amaurosis, partial opacities of the cornea, aqueous capsule or lens, and displacements of the pupil, would preclude the performance of Dieffenbach's operation, unless such conditions could be removed by appropriate treatment.

2nd, That strabismus from cerebral disease is to be met by treatment directed to the primary cause, and that the continuance of dangerous head symptoms would render any operative measures, directed to the cure of the strabismus, improper.

3d, That spasmodic squint should be treated by remedies directed to the general health, and that, at all events, whilst only occasional, the performance of the operation would be improper.

4th, That all forms, during the early stages, dependent on sympathetic disturbance, affections of the general nervous system, and cases, to the exclusion of those already enumerated, depending on idiopathic affections of the orbital nerves and muscles, are to be treated by general and local measures, directed by their pathology, to the exclusion of the operation.

5th, That the operation may successfully be performed in congenital cases, without any serious complication, and in every case where the squint has become habitual, provided that it is uncompli-

cated, and that its exciting cause, whatever it may have been, and its pathological origin, if disease or disturbance of the abdominal viscera, brain, or general nervous system, have been entirely eradicated.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abrégé."—D'ALEMBERT.

The Retrospect of Practical Medicine and Surgery for the year 1840. By W. BRAITHWAITE, of Leeds. No. I: January to July: pp. 200.

WE have here presented to our notice a modest unpretending volume, containing, according to the import of its title, an analysis or digest of the various British and Foreign journals that have appeared during the past six months. We have long thought that such an epitome, tabulated and arranged in a compact form, would be highly valuable to the general practitioner, because it would enable him, with the least possible expenditure of time, to inform himself of the advances made in a profession in whose practice he is engaged. Nor can such a book as the present be unacceptable to the more elaborate reader, since there is no one who would not find considerable profit and advantage in a perusal of the most interesting and important articles, after they have appeared in the various journals. We cannot do better, however, than let the author speak for himself. He says that "There are very few medical men in the present day, probably, who take the trouble to read every periodical, for the sake of gleanings from different parts that which is the most valuable and practical; and there are still fewer who could afford to take them all in, and especially those country practitioners who have not the advantage of subscribing to a public medical library. The work will form a kind of general index to all the medical journals of the day, pointing out those articles which are more particularly useful, and refreshing the memories of those gentlemen who have already read the articles, and, perhaps, forgotten them. It seems a pity that such a thing was never before attempted, and that all the valuable

matter which is to be found scattered in the different medical journals has not been re-spread before the profession, so that a parting bird's-eye-view might be had; for we are quite sure that a great majority of the profession are totally ignorant of the great mass of practical information which is constantly being published in one journal or another, simply because that information is in too *scattered* a form to be readily found by the active practitioner. He has to read too much to find the valuable matter which he wants, and probably his time, his habits, or his income, will not allow him to do this."—*Preface*.

We think the Editor has shown a considerable degree of judgment in the selection, arrangement, and condensation of the different articles; and the judicious remarks which he has appended to many of the subjects will be found highly serviceable to the reader. Regarding it as the first of a series, we hail its appearance with unalloyed satisfaction; and if the succeeding volumes be executed in a style commensurate with the present, our hearty wishes for its success attend it; because we think it will extend to a wider sphere that utility which is the constant aim of the public journalist, and enable the country practitioner especially to keep pace with the rapid improvements in medical science.

MEDICAL GAZETTE.

Friday, September 11, 1840.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

NEW PRIZES FOR THE MATERIA MEDICA.

Our readers will have been gratified to see in our advertising columns that the Society of Apothecaries intends to give annual prizes for proficiency in the knowledge of the *Materia Medica* and Therapeutics. Although we cannot altogether side with those who censure the devotion of the present age to speculative medicine, as some fruit has

already been reaped from it, and more may reasonably be expected, still we feel the utmost satisfaction when a step has been made in extending or teaching those branches of knowledge without which medicine, as a practical art, falls to the ground. Now, few things can be more necessary to the practitioner than a sound knowledge of the tools with which he works—the medicines which he daily prescribes; but, like other necessities, it is often dispensed with. We are not here speaking of a minute acquaintance with the botanical and chemical history of drugs, but of a knowledge of their most obvious properties; one need not go far, indeed, before one meets with the humiliating confession, that a practitioner on such an occasion did not prescribe a particular remedy because he did not know the dose!

Even those who are fresh from their studies are often deficient in this point. It is strange, as we observed a few years ago, that those who have breathed an atmosphere of drugs for five years should not be familiar with the *Materia Medica*; nay, in some instances, should not recognize the commonest articles when placed before them*. Yet so it is; and it appears, from the return made to Parliament, that the rejections at Blackfriars for ignorance of the *Materia Medica* have been very numerous.

Accordingly, the Worshipful Society, well knowing that the best method of producing useful merit is to try to get finished excellence, (as we encourage racers to improve the breed of saddle-horses,) has instituted prizes for proficiency in the *Materia Medica*. The chief conditions are as follows:—

1. Candidates are to have entered on the third Winter Session of their medical studies.

2. A gold medal will be given to the

* *MED. GAZETTE*, vol. xx. p. 696.

best man, and a silver one to the second best.

3. Those who pass satisfactorily will be arranged in two classes; in the first, their names will stand in the order of their merit; in the second, alphabetically.

4. The first examination will take place in October, 1841.

Those who are interested in more minute particulars will find them on the wrapper of our number for August the 21st.

The wording of the conditions appears to allow students to contend for the prizes who are not apprenticed to apothecaries; for it is said that "all medical students will be considered eligible as candidates for such prizes who have commenced the third winter session of their medical study, and bring testimonials from their teachers," &c. This does the Society infinite credit, so that we trust it will not turn out that we are wrong in our interpretation. This prize-examination will be eminently gratifying to those who pass through it; for even those who have not been so fortunate as to attain the honours of the first class, and who, consequently, can only boast of the simple approbation of their examiners, will have the satisfaction of reflecting that they have accumulated a store of knowledge which will be useful to them every hour of their lives. The intelligent pupil cannot fail to have remarked that the medical student, as well as the medical practitioner, passes through an unappointed examination in every company. The literary and the scientific seem to prepare questions to which they expect extemporaneous answers, and he who knows nothing of the history of his art, and of the sciences which are ancillary to it, sinks from the rank of a practitioner to that of an artisan.

It is right to remember that the art of medicine depends on the gradual ac-

cumulation of facts for many ages, and did not first begin to be practised with clearness forty years ago, as is tacitly assumed by many writers. Thus the late Mr. Twining, in his work on the Diseases of Bengal, supposed that the laborious and accurate observation of facts began only of late years to be "substituted for the vague conjectures of former years." Yet, to take one instance, ipecacuanha, the medicine which he recommends so strongly in the treatment of dysentery, had been used long before his time in that disease. Indeed, Helvetius received a large reward from Louis XIV. for this very thing.

The controversy between two London surgeons as to which of them first recommended incisions in erysipelas, might easily have been settled by any one who recollected that it was Freind's common practice: and other methods or opinions, broached from time to time as novelties, are to be found in Celsus, or perhaps even in Hippocrates."

The practical good sense which has always distinguished the examinations at Blackfriars, will, no doubt, allow due weight to the therapeutical subdivision of the subject; and when picked men offer themselves for examination, and strive for the golden prize, which is to attest the highest qualifications, the history of the art will not be altogether forgotten.

The first question that will naturally be asked by the diligent student, anxious to prepare himself for the honourable strife, is, what is the *materia medica*? Over how great a range of substances will the examination extend? We should conjecture, then, that it will comprehend all the simple substances, as well as the preparations of the London Pharmacopœia; and, in addition, all those agents which are commonly prescribed for the restoration of health, though not included in the list. Such are, bathing, mineral waters, electricity, and various

wines; sherry alone being mentioned in the Pharmacopœia. If there are any drugs which, though excluded from the London catalogue, enjoy an European reputation, they may possibly form a theme for inquiry. In good truth, however, it is rather difficult to find any which deserve this fame, if they have it; bistort and arnica are among the few which occur to us; and we believe it would be difficult to carry the number to a dozen. It is true that the practitioner will find in his travels, that drugs rarely or never used in England, from the abundance of better remedies, are reasonably employed in other countries. Thus the expressed juice of *Senecio vulgaris* (groundsel) is a common medicine for worms in Corfu; and the most popular remedy in Malta is oil of sweet almonds, which is used on all occasions.*

Still, such topics belong rather to local or provincial, than to general medicine. Here, the *Senecio vulgaris* is, we believe, never used in regular practice, though Gray calls a weak infusion of it a common purge; and oil of sweet almonds is considered merely an equivalent to olive oil.

Supposing, however, the examination to be limited to the drugs and preparations of our Pharmacopœia, with the other medicinal agents which we mentioned above, the field of inquiry will be wide, but not too extensive. For though pharmacology was once contracted by the French surgeons to eleven substances,† during an agitated period of "war and foreign levy," what was necessary then would be madness now. The poor inhabitants of Lapland must be content with the ground bark of trees for food, and indigenous plants for remedies; but if we can get corn from North America, and drugs from South, why should we do without?

Another question naturally presents itself—how deep will the examination plunge into the mysteries of botany? Not *very* far, we hope. The curious, we had almost said the dreary, subtleties of botany, have so little to do either with the practice of physic, or with that large and liberal knowledge of medicinal substances for which the eager student thirsts, that we hope extreme minutiae may be spared. This is not the place to touch on the constant splitting of genera, and the painful changeableness of medicinal nomenclature which is its result; but we would ask a practical question. When examiners ask to what natural order a plant belongs, *whose* natural order do they mean? There is a sufficient variety to choose from. Thus, Dr. Lindley, in his *School Botany*, places the fig among the *Urticacæ*; Dr. Willshire, in his *Principles of Botany*, among the *Artocarpæ*; Dr. A. T. Thomson, among the *Ficoideæ*, at p. 147 of his *Dispensary*, (ninth edition,) and among the *Urticacæ* at p. 398; Mr. Pereira follows Dr. Lindley, and puts the fig among the *Urticacæ*.*

Perhaps it would be best to refer plants to De Candolle's natural orders, excepting in cases where the London College specially cites some other botanist. For this, and other reasons, it would be desirable that the more eminent teachers of the *Materia Medica* should publish an abstract of their course; and we are happy to add that in this point we are backed by the practical authority of the Society of Apothecaries. In their last Regulations, after recommending a regular course of periodic examinations, they say, "The use of a class-book also, for each particular branch of study, would better enable the student to reduce into order the numerous facts placed before him, and to refer again and again to such points as require a sustained exercise of

* Hennen's Medical Topography of the Mediterranean, pp. 248 & 539.

† Young's Med. Literature, 2d edit., p. 452. ‡

* MED. GAZETTE, vol. xviii. p. 937.

the powers of reasoning, for their full and clear comprehension."

In chemistry three points are to be considered; the one is the proximate and ultimate composition of drugs; the second is the decompositions which take place in the preparation of officinal remedies; the third is the doctrine of incompatibles, or of decompositions which ought *not* to take place in prescriptions. All these topics merit the deepest study; and in all of them, but especially in the first one, a class-book sanctioned by high authority would be of unspeakable utility. It would spare the student much valuable time now lost in wandering from manual to manual in search of the information which he requires, and from the disgust occasioned by their mutual contradictions. We trust that the style of the examination will be such as to make it indispensable for every student to master the greater part of the London Pharmacopœia; its formulæ should be as familiar to him as household words. For want of this necessary knowledge, we often see practitioners hammering out some crude and awkward prescription, when an excellent formula was at hand, had they only remembered it:

But knowledge to their eyes its ample page
Rich with the spoils of time did ne'er unroll

or, rather, it was unrolled, but they refused to look at it.

It would be too *exigeant* to ask the student to examine the Edinburgh Pharmacopœia; and were he to read it very diligently, it might confuse by its discrepant resemblance to our own. The difference of the plants, too, to which the same vegetable substances are referred, would obscure his recollection of the London catalogue. There is one part, however, of its *Materia Medica* which he might transcribe into his common-place book with advantage; we mean the method of recognising the adulterations or imperfections of vege-

table substances, a topic which has been passed over in the London Pharmacopœia. Thus tests are given for gamboge, catechu, yellow bark, oil of cinnamon, conium, copaiba, creosote, creta preparata, croton oil, claterium, olive oil, opium, &c. &c.

Come we, lastly, to the therapeutic part, that part which lends value to the others. Much may be gathered in this department, as well as the rest, from the valuable lectures of Mr. Pereira, with which our readers are familiar; and there is considerable merit in the Dispensatory of Dr. A. T. Thomson, in spite of the numerous errors of the press or pen.

It is natural that such works should dwell chiefly on the opinions and practice of late writers; but we wish that they could afford a little more space to set forth those of earlier physicians. Who does not feel greater confidence in the rough virtues of buckthorn, when he hears that to it Sydenham attributed much of the success of his early practice; and who does not prescribe Tunbridge or Pyrmont with a livelier confidence, when he knows that Boerhaave has said, "*in ferro est aliquid divinum; sed nunquam præparata ejus artificialia id operantur, quod acidulæ martiales.*"

MEDICAL EXPERIMENTS.

By DR. J. C. G. JÖRG.

(Concluded from p. 897.)

Camphor.—This drug was first taken dissolved in spirit, and afterwards in substance. The solution contained a grain in eight drops, and the doses were from 4 to 28 drops. When taken in substance, the doses varied from half a grain to 12 grains. Dr. Jörg likewise gives at length Alexander's famous case, where that bold experimenter nearly destroyed himself with ℥ij. of camphor. The reader will find a short abstract of it in Christison, p. 647. It appears from the experiments of Dr. Jörg, that camphor is primarily a stimulus to the intestinal canal and brain, and secondarily excites the urinary and genital organs, and the vascular system. It affects the intestinal

canal chiefly as a nervine remedy, not so much by any bitter or acrid matter, as by a volatile ingredient; hence it acts almost like alcohol or any powerful and purely spirituous fluid; still these are not its only effects, for its bitter and acrid constituents also come into play. Its power of acting like a spirituous fluid, and causing a sense of burning in the mouth, and of warmth in the stomach and intestines, is increased by taking it dissolved in spirit; in this way, too, its nervine properties become more prominent.

Camphor is to be given in atonic diseases only; and it is not a sufficient indication for its use that some function is suppressed which it has the power of stimulating, unless the *vis vitæ* is at the same time in a low state. Thus it would be wrong to give camphor as a sudorific in acute fevers with a dry skin. From its property of stimulating the intestinal system, it is admirably adapted for diseases where, with great general debility, the functions of the intestinal canal are especially paralyzed. Since camphor does not inflate the abdomen, as valerian, serpentaria, and arnica do, it is unquestionably to be preferred in intestinal tympanitis of an atonic or putrid, but not an inflammatory character.*

The dose should not exceed half a grain to a grain every four or six hours.

Castor.—The results of the experiments with this substance may be summed up in a few words; it has no effect but that of causing eructations. The highest dose taken was xxiv. grains; but Alexander, who, more than half a century ago, took it in much larger doses, came to the same conclusion. It seemed one day to raise a thermometer placed upon the pit of his stomach one degree.

Musk.—The doses of this substance varied from half a grain to fifteen grains. It excited eructation, oppression of the stomach, want of appetite, (sometimes increase of hunger,) and dryness in the œsophagus; confusion, vertigo, weight, and heavy pains in the head; it acts as a stimulant upon the intestinal canal, but more especially upon the brain. As the secondary effects of this stimulating power, we have yawning, sleepiness, prolonged and deeper sleep, and relaxation of the whole body. When musk excites the whole nervous system considerably (as it is wont to do in sensitive persons) its power extends to the muscles also, causing trembling and shaking, or, in larger doses, convulsions. Musk

also increases the activity of the vascular system, making the pulse quicker and fuller, as appears from many of the experiments. Hence it belongs to the general stimulants, or remedies which heighten the *vis vitæ*; but on account of its especial action on the brain, which is perhaps reinforced by the continual odour from the stomach, it must be used with caution.

Dr. Jörg is of opinion that musk stands below camphor as a stimulant, and is especially inferior to it in cases where the organs of assimilation are much weakened. Unless, therefore, we wish particularly to profit by the narcotic power of musk, we shall in general do well to choose some other stimulant; partly, he says, because the smell of musk generally depresses the spirits of the patient and his friends, as it is almost universally looked upon as the last medicine prescribed before death; and partly because it is very dear and often adulterated.

The quantity of musk required for an effective dose was very different with different experimenters. Three grains with one did more than ten or fifteen with another, because the smaller dose was taken by very sensitive persons. But since this remedy, if prescribed in conformity with the rule *contrarium contrario*, will be taken only by those whose nervous sensibility is dulled, not sharpened, it is clear that the smaller doses which act upon the healthy would be inefficacious with the sick.*

Hence when the patient, anteriorly to his malady, has been very sensitive, from three to five grains will suffice for a dose; if rather torpid, from six to ten grains, or more, must be given. The interval between the doses should be eight or twelve hours.

St. Ignatius's Bean.—This remedy was first taken in the form of a tincture made with one part of the drug to eight parts of spirit. The doses varied from 4 to 200 drops, and met with very various powers of resistance in the club of experimenters. Thus Lippert, who seems to have been strychnine-proof, obtained only one half-fluid stool from 180 drops, and no effect at all from 200; while Meurer, in consequence of a dose of 40 drops, was attacked with the following symptoms: extreme giddiness, so that he could hardly stand upright; shooting pain in the head; tinnitus aurium; apparent motion of the surrounding objects; an incapacity of retaining the same idea for a moment; nausea; increased flow of saliva; and want of appetite. He slept better than he had done the preceding night after a dose of 32 drops, but he was attacked by headache at intervals for about 48 hours.

* Some years ago Dr. Tradini published in the *Gazette Médicale* three cases of tympanitis cured with camphor. He recommends much larger doses than Dr. Jörg, as he gives six or seven grains every four hours. There is an abstract of the cases in the *Medical Quarterly Review*, vol. iv. p. 260.—TRANSLATOR'S NOTE.

* This rule, though just, seems to us to have been hitherto but little attended to by Dr. Jörg in his estimation of doses.—TRANSLATOR'S NOTE.

The society afterwards took the drug in powder rubbed up with sugar of milk, but the largest dose was only four grains.

Dr. Jörg informs us that the *Faba St. Ignatii* primarily sharpens the activity of the intestinal system and the brain, and, in a general point of view, stimulates both organs, but with many peculiarities. Among these are its remarkable influence upon the salivary glands, and, doubtless, upon the pancreas and the mesenteric glands; and also the disappearance and re-appearance of its effects. This, however, is not always the case; the symptoms caused by this drug do not always suffer a remission and an exacerbation, nor does the re-appearance observe any regular interval.

Dr. Jörg recommends its use in weakness of the stomach, and in weakness of the eyes connected with inactivity of the brain, as an alterative in chronic diseases, and as the means of breaking, by a sudden shock, a morbid chain of symptoms whether in mind or body.

Dr. Jörg informs us that the dose should usually be half a grain or a grain, but if the tincture be used, the dose should be somewhat more than proportionably greater. It should not be repeated till after an interval of 24 hours; nay, the interval may sometimes be prolonged to 48 or 72.

Assafœtida.—The doses which were taken of this drug varied from half a grain to fifteen grains. It appeared from the results that *assafœtida* is a powerful stimulant to the alimentary canal, from the mouth to the anus; but it stimulates the upper part of the tube, the œsophagus, the stomach, and the small intestines, more than the lower part, or large intestines. This is a natural consequence of its affecting the intestinal canal chiefly by a specific acidity, and this acidity being decomposed principally in the upper part of the tube. Hence *assafœtida* is a good remedy for assisting digestion, but not for opening the bowels. It likewise stimulates the brain, but it is probable that this is only a secondary effect, and is a result of its stimulating the abdominal ganglia, and increasing their sensibility. It likewise stimulates the circulation, the urinary and the genital organs.

From these properties, Dr. Jörg deduces that *assafœtida* is very erroneously prescribed in hysteria, and in many hypochondriacal cases. Nor is it prescribed only in unsuitable cases, but in over-large doses. Half a grain will in general be a sufficient dose, though there are cases where two, three, four, or five grains may be taken at once; the remedy must not be repeated oftener than every twenty-four hours at the most.

Opium.—The society first took this drug

in the form of tincture prepared according to the Saxon Pharmacopœia, excepting that simple distilled water was substituted for cinnamon water. It was made by digesting one part of purified opium with three parts of rectified spirits and three parts of distilled water, until the opium was dissolved, and then filtering; the tincture, therefore, was about three times the strength of the London one. The doses varied from half a drop to thirty-six drops. When opium was taken in substance, the range of doses was from 1-12th of a grain to three grains.

The following are the conclusions at which Dr. Jörg arrives:—

“Opium first of all attacks the brain, and that more than any other organ, causing rapid and considerable congestion in it; and hence, in the beginning, it causes, in a proper dose, the feelings of lightness in the head (it seems as if the head itself were borne up by the air, as if it flew,) unusual cheerfulness, and also a state like intoxication; afterwards, confusion, giddiness, heaviness, oppression and pain in the head; lastly, sleepiness and even deep and sound sleep. Inasmuch as opium, like all the more powerful narcotics, chiefly attacks the anterior part of the brain, in so far does it especially affect the eyes and the nose, creating a sense of dryness there, and also secondarily obscures the sight, probably because it causes congestion in these organs.

“The stimulating power of opium, however, extends also to the whole nervous system; but the state of primary irritation frequently lasts so short a time, that it escapes our observation; for when the congestion in the brain has reached a considerable extent, (and, when opium has been taken, this often happens in a very short time, — in a few minutes, if the dose has been considerable,) the secondary state, or state of depression, comes on, particularly in the nerves under the influence of the will; and relaxation, weariness, faintness, immobility of the limbs, &c. supervene so rapidly, that in general we entirely overlook the preceding excitement. But if, on the other hand, opium is given in the proper dose, so that the primary excitation of the brain and nervous system is but moderate, those phenomena are offered to our observation which spring from an exaltation of nervous life; among these I number an increase of common sensation, or of the consciousness of existence, a more intense and exquisite perception of the external world, and greater activity in the muscles. But whether this state, with the corporeal and mental sensations flowing from it, lasts a short or long time, it is followed by the opposite condition, the intensity of which is proportioned to that of the previous

excitement; with this peculiarity, however, that the depression lasts much longer than the preceding increase of nervous life.

"Next to the brain and nerves, opium exerts its stimulus especially on the intestinal canal, and primarily causes powerful contractions of the stomach and of the small intestines, and, in a less degree, of the large ones; hence it causes oppression of the stomach, and perceptible but not painful movements of the intestines, and griping and colic pains, with a desire of evacuating the rectum; and also debility, nausea, and lessened or increased appetite. But in this great organ likewise the primary excitement is followed by a secondary depression of the *vis vitæ*, and hence there come on constipation, retention of flatus, and a tympanitic state of the abdomen, with a frequent desire to go to stool, although for a long time the *fæces* cannot be evacuated. For a long time the contractions of the intestinal canal seem to remain too weak to move on the harder excrements.

"From the stimulating effects of opium upon the nervous system and the intestinal canal, we learn its cardinal operations, on which its other numerous effects depend. When given in the smaller doses it does not act upon the whole of the two systems just named, while in the larger ones it extends to the vascular system, the skin, the urinary organs, and also the genitals; in such a manner that it calls forth in them alterations of more or less importance and variety, according as it is used in larger or smaller doses, and finds in the body a greater or less susceptibility to its impressions. What morbid symptom cannot a remedy produce, which primarily and secondarily changes the condition of the whole nervous system, and of the intestinal canal, in the way that opium does? Can we be surprised if occasionally palpitation, quickening of the circulation, hardness, largeness, and fulness of the pulse, or retardation, smallness, and contraction of the beat, and even an intermission of several beats, should arise; if the temperature of the body sometimes is increased and sometimes diminished; if at one time sweat breaks forth, at another the hot skin remains dry; if the urine deviated from the standard in quality or quantity; if the generative organs sometimes seem to be entirely quiescent, or sometimes too active; if rheumatic pains harass the extremities, &c. &c.? Nay, if in a more intense degree of its action, convulsions and apoplexy make their appearance?" (pp. 437-439.)

Dr. Jörg comes to the extraordinary conclusion, that opium ought very seldom to be used. He tells us that for the last ten years he has very rarely used opium, and that he is firmly convinced that it is

really indicated in very few cases of disease, but that in these few cases it is an indispensable medicine. The only ones he mentions are an excited, but not inflamed, state of the intestinal canal, with increased secretion from its inner surface, and consecutive vomiting or diarrhœa; and an excessive secretion from the kidneys, the genitals, and the skin.

Dr. Jörg recommends that the dose of opium should not exceed from one-twelfth to one-fourth of a grain, at intervals of 6, 12, 24, or more hours. When given as a clyster, in gruel or decoction of linseed, to soothe irritability of the bowels, the dose is to be from half a grain to a grain.

Digitalis.—A quarter of a grain was the smallest, and three grains the largest dose taken by any of the club, with one exception: Lippert carried the dose as far as ten grains, without any effect, though his medicine was weighed out from the vial which supplied the other members. (p. 445.) A few of the experimenters likewise took the tincture, infusion, or decoction.

The results of the experiments shewed that digitalis acts primarily as a stimulus to the brain, the intestinal canal, the urinary and the genital organs; and secondarily, as a sedative to the vascular system. We believe that the credit of having discovered that the sedative action of digitalis is preceded by a stimulant one, is entirely due to the Leipzig society.

It is to the power which digitalis has of stimulating the brain, that Dr. Jörg attributes its want of success in hydrocephalus; in another of his works (*Ueber die Kinderkrankheiten*), he observes, that by means of his experiments he discovered in a few weeks what Gölis was sixteen years in finding out, namely, the inutility of digitalis in acute hydrocephalus.

Dr. Jörg likewise disapproves of the foxglove in all dropsies where there is decided inflammation, and in whooping-cough; and doubts whether in many diseases of the heart its secondary or depressing power will not be unprofitable or injurious. Next to the powder, the decoction seemed strongest. The dose of the powder is not to exceed a quarter of a grain, half a grain, or, at most, a grain. The preparations being more or less uncertain, must be given in doses containing a proportionally larger quantity of the drug. The doses of foxglove, says he, are repeated too frequently; the intervals between them ought to be of 12, 24, or 48 hours.

Tincture of Iodine.—This preparation was made by dissolving 48 grains of iodine in an ounce of alcohol, and the doses varied from one to eighteen drops. The results showed that iodine acts primarily as a stimulus to the intestinal canal, from the

mouth to the anus; and it would appear that it excites the parietes of the intestines in a manner similar to that of healthy and very concentrated saliva and pancreatic juice. Hence in healthy persons it produces a salt taste, increased secretion of saliva, increased hunger and thirst, perceptible and increased movements of the intestines, slight griping, discharge of flatulence, excrements, and so on. Its stimulating power, however, extends to the brain also, as is the case with all remedies which considerably quicken the activity of the intestinal canal; hence it causes confusion in the head and heavy pain, sometimes of one, sometimes of another part of it. It also augments the flow of blood to the trachea and lungs, bringing them into a state approximating to inflammation, or actually inflaming them. This action seems to extend even to the Schneiderian membrane, and hence it secondarily causes increased secretion of mucus in the bronchi and the cavities of the nose. As iodine so powerfully excites the intestinal canal, it must necessarily affect the urinary and genital organs when its action reaches a very high degree, or is kept up very long.

After a few more observations, Dr. Jörg concludes his account and his book by asking—

“Who would then wish to limit this splendid remedy merely to the treatment of bronchoecle? We shall obtain most from it in diseases of the abdominal viscera, in weakness of the intestinal canal, in obstructions of the abdomen, in scrofula and similar maladies. Where particularly the vegetative processes of life are prostrate, and this morbid state is accompanied by diminished *vis vitæ*, it promises the greatest performances. Yet it must always be used with caution, lest it should excite inflammation, or too great a luxuriance of growth, or resolution of the tissues. (*Zu beträchtliche Wucherung oder Auflockerung.*) From two to eight drops every 24 or 48 hours will be the usual dose.” (p. 500.)—Abridged from Dr. Jörg’s *Materialien zu einer Künftigen Heilmittellehre*. (Our scanty compendium can hardly give a notion of the German minuteness and diligence which are conspicuous in every page of the original. Its merits are undoubtedly very great. Yet, in many instances, Dr. Jörg appears to have concluded too hastily from the healthy to the sick. He believes in the discutient powers of arnica, though the society afforded no tumor to discuss; surely the anodyne and antispasmodic powers of opium are beyond the reach of doubt, though among the happy experimentalists of Leipzig there was not a pain to be soothed, nor a spasm to be resolved.—

TRANSLATOR)

PRACTICAL OBSERVATIONS

ON

PECULIAR AFFECTIONS OF THE THROAT,

ARISING FROM ABSCESS BETWEEN THE PHARYNX AND SPINE, AND OCCURRING IN CHILDREN AND ADULTS;

Exemplified by Cases.

By CHRISTOPHER FLEMING, M.D.,

Member of the Royal College of Surgeons, Ireland; Member of the Court of Assistants; Lecturer on Surgery, &c. &c.

[At the request of the intelligent author, we insert the following paper, which originally appeared in the Dublin Medical Journal.—ED. GAZ.]

The several obstructions, mechanical or otherwise, which occur in the fauces, and impede the functions of respiration or deglutition, have particularly attracted the attention of the profession. They are frequently met with, and in the majority of instances they are referrible to causes sufficiently manifest. Occasionally, however, considerable difficulty attends their diagnosis, particularly in children, from the extreme obscurity and anomalous character of the symptoms. Such difficulty occurred in those attendant on inflammation at the back of the pharynx, terminating in abscess, illustrative of which I beg to subjoin the following cases.

Of a family of five boys the eldest, aged seven years, the youngest one year and eight months, three were attacked as follows, without any assignable cause.

The youngest, a healthy child, went to bed well; after about two hours awoke with vomiting, which attracted no particular attention; passed the night tranquilly; next morning appeared heavy, took his ordinary mid-day sleep, and was found, about two o'clock, P.M., in convulsions. Immediate assistance was procured, which, notwithstanding the most prompt and active treatment, proved unavailing. I saw him for the first time about two hours before death; he was then comatose, and almost pulseless; the left side was wholly paralytic; the right slightly convulsed. He survived the attack only twenty-two hours, dating from the supervention of the convulsions—thirty-nine from that of the vomiting.

On examination after death, considerable vascular turgescence was found within the skull, and throughout the substance of the brain. No other appreciable lesion was discernible.

This occurred on the last Friday in May, 1836.

On the following Sunday, the third boy, aged six years, was attacked. He was a remarkably delicate child, and much emaciated, being then only convalescent from remittent fever. He now vomited repeatedly, complained of violent pain in the head, and had other smart febrile symptoms. However, by mild depletory measures, he passed through an illness of three or four days' duration, without any remarkable occurrence.

On Monday, the fourth boy (the subject of this communication) sickened with precisely the same train of symptoms. His age was three years and a half, and in appearance he was healthy. The premonitory symptoms of his attack, at first mild, after about thirty-six hours assumed most intense severity, and without unnecessarily particularizing their progress, it may be stated, that the most aggravated form of high inflammatory fever set in, principally engaging the cerebral organs, and requiring the most energetic treatment to combat it. On about the fourth day, convalescence appeared established, and Dr. Crampton (whose valuable assistance I had throughout the progress of this case) discontinued his daily attendance.

From day to day a peculiar fixed position of the head, and stiffness in the neck, now attracted attention. The head was drawn back. The muscles, at first tense, became completely and permanently rigid, and the movements of the head painful, and remarkably limited. Soreness of the throat was complained of, and also great difficulty in swallowing, at times accompanied with violent spasmodic efforts. There was no cough, and the voice remained perfect. The articulation became remarkable—the words being as if drawled out with pain and difficulty, and at times perfectly unintelligible.

Repeated and careful examination of the fauces and neck could not detect any apparent local cause for those symptoms, which, with varied degrees of intensity, advanced, producing equally alarming constitutional disturbance and debility.

At first, disposed to attribute them to concurrent local causes, such as the quantity of mercury administered during the acute illness of the child, the cold from the renewed application of ice to the head, or some partial internal effusion, the result of the acute inflammatory attack, more serious mischief was now apprehended from their increasing severity and permanency. The treatment adopted was principally with the view of promoting the absorption of any fluid effused, and consisted chiefly in the exhibition of mild mercurial alteratives, and the application of counter-irritants of the region of the occiput.

On about the tenth day, the symptoms had reached their acmé; the child, emaciated and weakened, had no relish for food, and appeared to drink merely to allay thirst, the efforts at swallowing being convulsive and painful. He was now in a perfect state of somnolency, regardless of every thing about him, when accidentally, while sitting beside his bed, I perceived that *position* most remarkably influenced the severity of the prominent symptoms. Stupor in the recumbent posture, almost amounting to perfect coma, in the sitting, or even semi-erect, resolved itself into a comparative sensibility. Respiration, slow, laboured, and stertorous, or rather roaring, (as described by the attendants on the child,) in the former position, became comparatively tranquil in the latter, and a pulse, in the one, ranging only a beat or so above forty, in the other assumed a more natural character. Again, fluids were more frequently darted convulsively forwards through the nostrils or mouth, than passed into the stomach, or were ejected, as in the act of vomiting, and the recurrence of the symptoms of cerebral compression took place on returning to the recumbent posture, which for the last three days had been almost the permanent one.

I now considered that this relation of symptoms might still be caused by mechanical obstruction in the pharynx, although repeated examinations on former occasions did not lead me to this conclusion. An additional obstacle presented itself in the fixed position of the jaws, so that it was only by considerable force I could so far separate them as to admit of even getting my little finger between them. On forcing it back, I accidentally, but distinctly, felt a tumefaction beyond the base of the tongue, giving, as well as a compressed finger could indicate it, a sense of yielding. To get a view of it was utterly impossible. The soft palate and uvula were easily discernible, but the depression of the tongue gave so much pain, and the separation of the jaws was so very limited, that further investigation was totally out of the question. Indeed, in addition, the evidence, even from touch, was necessarily momentary, from the severe paroxysms of dyspnoea attendant on the examination. Although I had never heard of, nor witnessed, a case of the kind before in children, it at once occurred to me that this might be an abscess at the back of the pharynx, mechanically producing the above symptoms, and having stated this as my opinion to the family, the assistance of Dr. Crampton and Mr. Cusack was immediately procured. After a patient, though extremely unsatisfactory examination, they coincided in opinion with me as to the presence of a

tumor in the situation alluded to, and it was determined that I should perforate it with an explorator which I had provided for the purpose, with the view of ascertaining its actual nature,—a doubt existing on this head, not alone from the extreme firmness of the tumor communicating a very indistinct sense of fluctuation, but also on account of its probable anomalous nature, from the previous acute and present chronic cephalic symptoms. With every necessary precaution I accomplished this object, though with considerable difficulty, and, to my great gratification, witnessed the sudden gushing forth of a large quantity of healthy purulent matter. The whole features of the case were almost instantaneously altered. The somnolency was removed, deglutition was facilitated, and more cheering prospects manifested themselves. Nourishment was freely given throughout the day, and quinine administered in small and repeated doses.

At my evening visit I perceived that the stertorous breathing had returned, and that the more prominent symptoms, which had ceased since the operation, were again in some degree present. I examined the throat, and fortunately found the separation of the jaws now accomplished with ease. The abscess was again filled, with the opening closed. I introduced a carefully protected sharp-pointed bistoury into the site of the opening, and freely enlarged it downwards. The relief was instantaneous. I now directed the trunk of the child to be elevated as much as possible, and the head depressed. The night was passed comparatively tranquil; the quantity of matter which escaped through the mouth was considerable, largely staining the pillow. The next day the boy was able to play with his brothers, and subsequently his improvement was progressive, though slow.

He is now a fine healthy boy. I do not particularize the treatment adopted during his convalescence; there was nothing peculiar in it, its principal object being to improve the general health. The next case which I shall select is that of a boy aged seven months, proving the remarkable fact of the occurrence of such an affection during the first period of childhood, as the former does during the second.

In April 1838, I was sent for to see this child by the father, who stated that he had great apprehension his little boy was labouring under water on the brain; that many children of his immediate family had fallen victims to it, and that the symptoms under which this child laboured were exactly those by which the attacks of the former had been ushered in. On visiting the child I found every indication of gastro-enteric derangement, so common

at this period of life, and very suspicious cerebral complication, rendered more so from the fact of hereditary predisposition. In addition, I found that some lymphatic glands, on the left side of the neck, near the angle of the jaw, were enlarged and painful, evidently depending on ulceration behind the corresponding ear. The mouth, fauces, and pharynx, were free from lesion, and one of the incisors on the lower jaw had just made its appearance.

The treatment was principally directed to the abdominal system, and to the relief of the glandular irritation noted. After a few days, improvement was so manifest, that I had omitted a visit on Friday.

On Saturday morning I received a hurried message to see the child, and found that the more alarming symptoms had all returned during the previous night, that the restlessness was incessant, that the vomiting was constant, that the flushing of the face was renewed, that the breathing was loud, laboured, and very irregular during the night, and that he constantly started from most disturbed sleep, which would only be tolerated in the nurse's arms; that every attempt at putting him in the cradle aggravated the pulmonary symptoms. In addition, I observed that the head of the child was rather drawn back, and that the chin projected somewhat unnaturally. He immediately screamed when the jaws were attempted to be separated, and in the region of the neck there was the greatest tenderness, particularly over the glands above alluded to. The integuments were free from discoloration, yet still the tumefaction was decidedly increased, and the slightest motion of the head appeared to give great pain.

At the moment, I was disposed to attribute the recurrence of those symptoms to a smart attack of inflammation in these glands, and was led to hope that the combating it would relieve them. The treatment was accordingly directed with that object in view. Leeches were applied; fomentations and poultice used, and a smart mercurial purgative administered.

Sunday.—Night spent wretchedly; no alleviation of symptoms, with the exception of those connected with the inflamed glands; they are better: the other symptoms are, if possible, more aggravated. In addition to those enumerated in the report of yesterday, there is now a gurgling noise in the fauces, as if from accumulated mucus, and throughout the lungs there is evidence of considerable effusion into the larger bronchial tubes; there are repeated and apparently painful and difficult efforts at swallowing, accompanied with frightful paroxysms of dyspnoea occurring at irre-

gular intervals, during which the countenance becomes suffused, purple, and almost convulsed, and it is remarked that those immediately supervene on attempting to place the child in the cradle; there is incapability of sucking, though great desire for the breast, the nipple of which is seized with avidity, and equally rapidly ejected with a sudden and spasmodic regurgitation of the milk. Any fluid placed in the mouth either remains for a short time, and then gradually dribbles out, or otherwise produces a paroxysm accompanied with similar phenomena. At the moment of my visit, the repeated exertions of the child at the attempt of swallowing, the severe dyspnœa, and the great accumulation of mucus in the fauces, with the very restless state of the child, led me to apprehend the supervention of a fit of convulsions. I thought I recognised some of the features of the above case, when, from some unintentional act in my examination, a most severe paroxysm supervened. The child appeared suffocating. I rapidly passed my finger into the fauces, and feeling a fulness, I made pressure against it, which was increased by a convulsive effort of the child. A sudden discharge of purulent matter got exit through the nostrils, and temporary relief was obtained, until I procured the additional assistance of Sir Henry Marsh and Mr. Cusack.

Perhaps about an hour or so had elapsed from the above occurrence when we met in consultation. At this time the breathing, though principally nasal, was more tranquil; and a small quantity of fluid had been swallowed, but with much difficulty. The appearance of the child could not but make an impression upon those who saw him. The nostrils were filled with matter which trickled down the lip; any attempt at placing him in a recumbent posture was instantly followed by frightful dyspnœa, rendered still more serious from the great accumulation of mucus in the fauces. I directed attention to the throat, but notwithstanding every effort, no accurate view could be had of the back of the pharynx. The narrow space behind the root of the tongue was filled with pus and bubbles of frothy tenacious saliva, to clear which away repeated unsuccessful attempts were made. Here the freedom of separation of the jaws allowed of free, though rapid examination of the fauces, but the back of the pharynx could not be seen. I, however, felt a distinct tumefaction, and failing to puncture it with the grooved curette, as in the former case, I was obliged to rest satisfied with what had been done, arranging to watch the progress of the symptoms, and to support the child by every possible means, by introducing fluids through a

tube passed through the nares, and by broth enemata; to be prepared, if necessary, to open the trachea should any fresh symptoms of suffocation supervene; and in addition, to keep constantly cleared away the accumulating phlegm at the back of the throat.

By visiting at short intervals, and carefully enforcing the above injunctions, the strength was supported, and the symptoms to a certain extent stayed. Next day they were stationary, though it was quite evident that considerable obstruction yet existed in the throat; however, the strength was improved, and the countenance of the child decidedly better. Another day passed without any material change, when the discharge from the nostrils ceased, and evidently, any opening made, or rather the ruptured portion of the sac had closed. Difficult respiration in any but the erect posture, or on an inclined plane with the head considerably depressed, recurred. Perfect inability of sucking and swallowing again set in, and suffocation appeared impending, when Mr. Cusack saw the child, and was still more satisfied of the presence of a tumor at the back of the pharynx. It was so tense and so unyielding, that did not the history of the case justify the presumption that matter was present, the absence of any sense of fluctuation would have caused extreme doubt; another difficulty presented itself in its being below the level of the tongue. The very limited space to operate in, together with the risk of wounding the neighbouring vessels, on account of the disposition of the swelling rather from the median line towards the left side, suggested the propriety of selecting some instrument the action of which could be accurately gauged. That which I had used in the former case was objectionable, not alone from the want of sufficient command of it from its conformation, but also from its shape. It was agreed that delay might be safely hazarded until next day, leaving word however, that should any urgent symptoms set in, I should be informed.

Next day, I found that throughout the night great apprehensions were entertained lest suffocation should have taken place. All other bad symptoms remained, if not aggravated, at least stationary; and having arranged in the interim with Mr. Cusack, an instrument was contrived which succeeded most admirably. It consisted of a trochar about four inches long, one extremity of the canula being slightly curved, the other with a ring on its upper surface to receive the fore-finger; into this canula was passed a jointed stilette, with, at its opposite extremity, a ring for the thumb, and a moveable screw to graduate

the projection of its point. Mr. Cnsack having firmly supported the head of the child, I passed the fore-finger of the left hand towards the back of the pharynx, there resting the point of it, and guiding the armed trochar with the concealed stilette along it, accurately fixed it on the tumor, pressed forwards the stilette to its limited mark, and withdrawing it by an opposite manœuvre, was gratified to see a quantity of healthy purulent matter darted forwards on the child's clothes.

The relief was immediate; the hæmorrhage trifling; and the result permanently successful. In this case it was unnecessary to renew the opening; the discharge, at first temporarily ceasing, returned, and the cure was rapid.

The boy is now a fine healthy boy. The constitutional treatment was similar to that adopted in the last case.

Such is the history of two extreme cases of acute abscesses at the back of the pharynx, occurring in children, selected from others of the same nature, which I have witnessed within the last three years, and necessarily with opportunities comparatively limited. I have brought them forward as remarkably illustrative of the symptoms attendant on their progress; as novel at that period of life, in the records of medicine, as far as I have been enabled to learn, from the investigations I have made; and as corroborated by the testimony of others.

I cannot instance the history of any similar acute case occurring in the adult, which came immediately under my observation, although I have watched for such with much anxiety for no very short period. I have attended many severe cases of tonsillitis, which have terminated in suppuration, some of which I have opened between the pillars of the fauces, and some on the anterior part of the velum. I have met with abscesses of the velum itself, and of the uvula, and I have met with one or two of that description, so accurately and so beautifully described by Petit*, which form behind the tonsil, and I believe always implicate more or less the auditory apparatus, but I have never been able to detect an abscess situated distinctly at the back of the pharynx, or perhaps, I should rather say, that the symptoms attendant on such did not attract my attention. That such collections take place cannot, however, be questioned. The experience of our surgeons in extensive practice will bear testimony to the fact of their occasional, though extremely rare occurrence, and will, I am sure, confirm the statement,

that their attendant symptoms are so equivocal and anomalous, that if discovered, they have been so by the merest accident. The first systematic author I find particularly alluding to their presence, is Sir Astley Cooper. In his lecture on Abscesses, he thus expresses himself: "Abscesses are also dangerous, from their being situated in vitally important parts, such as the brain, heart, or lungs; or when they are not seated in parts of vital importance, from their pressure on essential organs."

"CASES.—A woman was admitted into Guy's Hospital for a complaint in the throat, occasioned by *swallowing a pointed bone*. All she complained of at first was a soreness in the throat; but she was shortly after seized with difficulty of breathing, which increased greatly, and she died.

On examination after death, I found, upon making an incision into the pharynx, that between it and the forepart of the vertebræ a large abscess had formed, which, by pressing the pharynx forward on the epiglottis and glottis, occasioned difficulty of breathing, and in the end destruction of life. Shortly after this, Dr. Babington came to this hospital with a friend of his, who was labouring under great difficulty of breathing. He requested me to examine his throat. Having put my finger on the back of the pharynx, and felt fluctuation there, I told him that this was a case of which I had seen an instance, where the patient had died from a collection of matter formed in the same situation. I immediately procured a seton needle, and including it in a canula, like a trochar, I put it down into the pharynx, let out a considerable quantity of matter, and the patient was relieved. Here was a case which, but for this operation, would probably have terminated fatally, by the pressure of the matter on vitally important parts."

In the "Dictionnaire de Médecine et Chirurgie Pratiques," under the article "Pharyngotomie et Pharyngotomie," another case will be found, in which the presence of an abscess at the back of the pharynx was detected, and its puncture followed by successful results. But in each and all of those recorded cases, it is a remarkable fact, that the abscess was actually formed, before a suspicion of its existence was entertained, so extremely equivocal were its premonitory symptoms, even in the case where the exciting cause naturally led to the examination of its immediate seat. Hence, it appears to me, that the subject is one of extreme importance, and fully deserving of separate investigation.

[To be concluded in our next.]

* *Traité des Maladies Chirurgicales, et des Opérations qui leur conviennent. Ouvrage Posthume de M. J. L. Petit. Paris Edition, 1774. Chapitre iv. des Tumeurs, p. 139.*

THOUGHTS ON MEDICINE.

[Concluded from p. 927.]

CALLICRATES is a medical system-monger. He takes an idea, and attaches himself to it; broods over it, fecundates it, fashions and stretches it beyond all measure; and it sometimes becomes a fixed idea, a monomania. Let him once bestride the back of his systematic chimera, and he is ready to fight to the last extremity. Experience, facts, phenomena, observations, inductions, principles, however opposed to his system, do not trouble him in the least; he applies his magnifying-glass to them, and from that moment sees what he wants to see, and as he wishes to see it. "There is nothing," he says, with energy, "better demonstrated or more certain; a man must be very ignorant, or very dishonest not to see as I do;" this is the pathognomonic symptom of his madness. After this every proof suits him, every argument is good. However little you press him, Callicrates will maintain that white is not white, that a stick has not two ends. He reminds one of that bold and subtle dialectician who had an answer for every thing. Some one said, "the north wind is blowing;" "by no means," he replied; it is the south wind—but it is going home."

When a student came to solicit the protection of Louis, the celebrated secretary of the Academy of Surgery, the latter never failed to ask, "Do you know anatomy?" "Yes, sir." "Well, then, describe the stool which stands before you." Louis was right, and used an excellent means of fathoming a man's understanding, and making out his future destiny; in this way he judged of the sagacity, the logic, and the methodic manner of the candidate. There is an infinity of things in our art which are like Louis's stool, and many persons would find it difficult to describe them well.

Let us be good and just, let us be frank and open, but do not let us be dupes. Let us say as a man of sense did: "I give you notice that I cannot allow myself to be bitten without leave asked; I want to bit myself, or, at any rate, to give my vote so as to know who is to ride me."

RECEIVED FOR REVIEW.

Manual of Pharmacy for the Student of Veterinary Medicine, containing the Substances employed at the Royal Veterinary College, with an Attempt at their Classification, and the Pharmacopœia of the Institution. By W. J. T. Morton, Lec-

turer on Veterinary Materia Medica. 2d Edition. Longman, 1840.

Medical and Physiological Commentaries. By Martyn Paine, M.D. A.M. In 2 vols. Collins, New York, and Churchill, London.

Surgical, Operative, and Mechanical Dentistry: the substance of a series of lectures delivered by L. Charles de Loude. With 4 plates. Whittaker and Co. 1840.

ROYAL COLLEGE OF SURGEONS
IN LONDON.

LIST OF GENTLEMEN ADMITTED MEMBERS

Friday, Aug. 21, 1840.

Edward Kearney.—Frederick W. Barton.—George Cordwent.—William F. Chorley.—John B. Gibson.—Henry Ingles.—Edward Monks.—Alfred J. Simkins.—James Gleadall.—John Calt.

Tuesday, Aug. 25, 1840.

Augustus P. Lockwood.—William A. Maiben.—Richard F. Stott.—Samuel J. Burch.—Stuart K. Rea.—William P. Beloe.—Henry Giles.—Richard Gilbertson.—Francis Wright.—John G. Phipps.—John Ellis.—Thomas Guy.

Friday, Aug. 28, 1840.

George H. Gordon.—George Birch.—Thomas C. Wood.—William H. Ashley.—Samuel D. Downing.—Charles Richardson.—Charles H. Claridge.—James Wotton.—Richard Thomas.—John Warner.

Monday, Aug. 31, 1840.

William Barker.—John Murphy.—John Ewing.—William Ritchie Glennie.—George Kemp.—Alexander Robertson.—Rowland H. Mackenzie.—John Harrison.—William Henry Edwards.—David Stewart.—George Henderson.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED
CERTIFICATES.

Thursday, Sept. 3, 1840.

Edward Dennis Hacon.—John Beevor.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude $51^{\circ} 37' 32''$ N.
Longitude $0^{\circ} 3' 51''$ W. of Greenwich.

Sept.	THERMOMETER	BAROMETER.
Wednesday 1	from 58 to 75	29.71 to 29.62
Thursday 2	53 64	29.55 29.74
Friday 3	44 65	29.74 29.75
Saturday 4	45 66	29.87 30.04
Sunday 5	41 69	30.12 30.14
Monday 6	54 67	30.03 29.99
Tuesday 7	45 64	30.04 30.07

Prevailing wind, S.W.

On the 2d, morning clear, otherwise cloudy, with heavy rain. The 3d generally clear, except the morning; rain at times. The 4th, afternoon cloudy, with rain, otherwise clear. The 5th and following day generally clear. The 7th, afternoon overcast, with rain, otherwise clear. The 8th, morning clear, otherwise cloudy; a few drops of rain fell during the afternoon.

Rain fallen, .315 of an inch.

CHARLES HENRY ADAMS.

WILSON & OGILVY, 57, Skinner Street, London.

THE
LONDON MEDICAL GAZETTE,
BEING A
WEEKLY JOURNAL

OF
Medicine and the Collateral Sciences.

FRIDAY, SEPTEMBER 18, 1840.

LECTURES

ON THE

PRINCIPLES AND PRACTICE OF
SURGERY.

Delivered at the Westminster Hospital School

BY BENJAMIN PHILLIPS, F.R.S.

Surgeon to the St. Marylebone Infirmary.

DISEASES OF THE SPINE, *continued.*—
CURVATURE, its Prognosis and Treatment.

Prognosis.—The prognosis, in cases of curvature of the spine, depends upon the age of the patient, the duration, causes, degree, and complications of the disease. Certain curvatures, which have not yet become permanent, and which are dependent on a general disease, or upon debility of the muscular system, may, in a few instances, disappear under a favourable modification of the general health; but it is always dangerous to rely on the power of nature to cure these cases, because experience has demonstrated that in the greater number of cases this hope would be deceived. The younger the patient, and the less decided the curvature, the more chance of success does prudent treatment offer. In aged persons, and even in adults, a well-directed treatment perseveringly employed may arrest the progress of the disease, but will not effect a complete cure. If the disease be dependent upon change in the vertebræ, the prognosis is always more unfavourable than when it depends upon muscular debility. If there be several curvatures the chances of success are less than when there is only one; and if they be of long standing, as alteration in the vertebræ increases day by day, the disease is incurable. But, although there may be no age in which we are interdicted from hoping that a cure may take place, yet there are

other elements of prognosis to be taken into account: for instance, we cannot hope to remedy a deformity depending upon tumefaction of the intervertebral cartilages, without modifying the condition of the system under which they have been developed: as a basis for prognosis, therefore, we must endeavour to ascertain the cause: we must then seek to ascertain whether the deformity is increasing; because if it be, what power is to sustain the body when the curvature is considerable? The muscles cannot; their action is essentially intermitted. Ossification can alone give the necessary support, and no change in form can then be expected.

The remark "that for two or three years there has been no increase of deformity;" that, still more important, of the progressive and complete cessation, for some time past, of all the indefinite symptoms of inexplicable functional lesions which accompany the disease, are strong presumptions that the time for ameliorating the deformity is passed. To discover this state we are advised that the patient must be undressed, he must lie on the back, the relaxed muscle must be rubbed with a stimulating liniment, the retracted muscle with astringents, and by convenient tractions we must seek to straighten the spine. If in these attempts the patient experiences a sense of tension and weight at the situation of the curvature, and not at the points of insertion of the contracted muscles, we may conclude that ankylosis exists. This becomes still more clear when temporary or permanent extension brings no change in the column; if, on the contrary, a change is apparent, we may encourage some hopes of amelioration. Ankylosis is not very frequent; we do not usually meet with it except in old and very decided curvatures, and in persons advanced in age.

It is important to consider whether in any particular stage of the disease it is

curable. In a first degree, when the chances of cure are greatest, the symptoms are vague enough to escape even the watchful vigilance of a mother, and medical men are rarely called upon to see them, and if they are they frequently detect nothing, reassure the parents, and refer the inconvenience to vicious attitudes. At this time the spinous processes have suffered no deviation. The characteristic sign which is generally present before any curvature of the spinous processes is apparent, is an elongated prominence between the spinal border of the scapula and the spinous processes. Even in this degree there is in the attitude and the walk some embarrassment, which it is true often escape notice. Pass to the next stage, the curvatures become marked, the dorsal predominating; the trunk is generally inclined to the right, the shoulder is raised. The left side is hollowed, the excavation commencing at the axilla, and extending to the ilium. The right hip projects, the left is almost effaced. Here the chances of cure are greatly lessened. Pass on, and the condition becomes remarkable for the angular prominence of the ribs posteriorly; the ilium approaches to the base of the chest, the gibbous condition and shortening of the trunk are very striking. The superior curvature then extends high; the shoulders are so raised that the head almost seems as if it were shrunk between them, the stature becomes greatly lessened, the arms present a length very disproportioned to the trunk, the fingers are long, the lower jaw prominent, the cheek bones projecting, the nose pinched. Palliation is all that can be expected at that period.

What is essential for you to bear in mind is the attitude of patients in this condition. You must distinguish between those which are natural and those which are artificial, suggested by parents for the purpose of lessening the appearance of deformity. We may see a patient incline forward the arm which corresponds to the raised shoulder, to endeavour to lessen it, and to incline in an opposite direction that of the other side. If the deformity be very great this dissimulation cannot be practised; the left arm looks longer than the right: not that the right is really shortened, but as it is placed further back, it cannot be brought so far forward. Add to that the right arm seems pressed against the chest, whilst in consequence of the depression the left is separated from it. The legs are not equally resting on the ground. It is commonly imagined that this attitude depends upon an inclination of the pelvis; but it does not. Whatever may be the degree of incurvation of the spine, so long as there is no difference in

length of the lower limbs, the two crests of the ilium should rest on the same plane. Often patients have the right knee bent, and the limb resting against the left, which supports the weight of the body, when the predominant curve inclines to the right. At other times it is the left limb which is flexed, and the right limb which supports the body.

Sometimes the disease runs through its different stages rapidly, in a year for instance; usually it is several years increasing; it sometimes remains stationary up to old age, or to the occurrence of some serious disease.

It is very common to hear patients complain of anomalous pains, sometimes dependent upon pressure of the spinal nerves as they pass out sometimes upon the twisting of organs; respiration and circulation are often disturbed, and the countenance is pallid. The digestive organs are interfered with: there is often much debility of the lower limbs. In a majority of cases the existence of such individuals is not greatly prolonged; they die of phthisis, heart disease, or some chronic affection. Still, every considerable deformity is not quickly mortal. When the curvature is very gradually produced, when important organs become almost insensibly accustomed to the pressure to which they may be subjected, when the patient is naturally robust, and the deviation is restrained from making further progress, health may be restored, and the patient may attain old age; but these are exceptions, on the faith of which we should not be justified in neglecting all available means of cure. It is believed by many persons that the inclination towards the left side is more dangerous than that towards the right, because it interferes most with the heart's action. I do not wish you to understand that the curvature towards the right has little danger, and that the left has much. You may see in museums many specimens of old people in which the displacement was to the left.

Treatment.—After what has been said, you will already have concluded that no uniform plan of curing curvature of the spine can be admitted. You are not among those who believe that any original feebleness of the constitution is a general or unique cause of all curvatures, or that a tonic plan of treatment is capable either of curing or even arresting them. You will not tell the friends of the patient that with puberty will come increased muscular power, and a disappearance of the deformity. When that puberty arrives, the curvature may be beyond the resources of art. Yet this is a common error. Go to the sea-side, and you will find many patients in this condition, sent down year

by year to seek what they will never find. You cannot be altogether surprised at this error; there is muscular debility; that debility interferes with exercise; the absence of exercise destroys muscular contractility; and the reasoning which too often follows is not that the diminished muscular power is a consequence, but a cause of the deformity. They are, therefore, principally occupied about restoring the strength, while, in a large proportion of cases, the feebleness is secondary; this is losing precious time in useless treatment. A further loss of time is sustained by waiting for the proper season for particular watering places, giving them a long trial, and frequently returning to them from year to year, whilst the deformity is becoming incurable. Another serious source of error in treatment is, that many medical men persist in regarding all curvatures as *ricketty*, and resorting to accredited means for lessening the softening of the bones. Another injurious though more just idea arose out of this idea—the dictum that absolute rest would cure, or, at least, suspend the progress of the deformity: so general was this opinion, that formerly there was scarcely a school, I was going to say a house, where the inclined plane was not to be found. Here, on the hard board, a poor child was constantly doomed to lie, almost motionless, for months, or even years, and this sometimes on mere suspicion. But in this country it was ascertained that softening was not the most frequent cause of deformity, and that prolonged rest is marvellously favourable to increase the evil. Unfortunately many people have gone to the other extreme, and, having ascertained the evil of prolonged inaction, are unwilling to acknowledge its utility, within proper limits, and would proscribe it entirely. But an absurd practice still exists, founded on the idea that beauty of form cannot be acquired without the assistance of art, and the feet are doomed to suffer from tight shoes, the trunk from stays representing an inverted cone; and this is too much regarded. The work of Andry is a monument to attest all the absurdities which may be committed when we cease to take nature for our guide—but happily this mania is disappearing.

The treatment of curvature rests on very simple indications; restore the equilibrium which has been destroyed between the two sides of the spine. To accomplish this we must remove the known causes of this difference; we must use every prudent means of restoring the energy and regularity of the powers of the system, and we must place the affected parts in a physical condition most proper to bring about amelioration. Formerly the first of

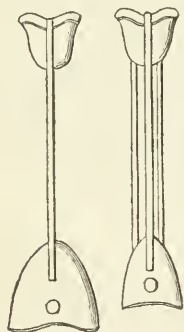
these means was entirely neglected, and the treatment was almost purely mechanical. The proof of this is furnished by the different machines which have been proposed as remedies. In our time the treatment of these affections has become an object of careful study, and at present it rests upon a better basis—a more attentive observation of the disease. You must carefully inquire, in each case, into all the circumstances likely to throw light upon the causes; you must seek to ascertain their mode of action; you will not then base your treatment on uncertain hypotheses, but on more or less completely ascertained facts. Sometimes it will be necessary to substitute for a long-continued attitude, a consequence of immobility, or inaction, a varied exercise, sometimes to repair by rest the exhausted powers, broken down by long disease, or painful labour. Sometimes we substitute for the exclusive use of one limb that of the opposite one; we must frequently change the familiar position of persons having particular occupations; we must remedy some painful affection of the legs, or of the side of the body which causes the patient to adopt the vicious attitude; we must ascertain whether any article of clothing, such as an ill-fitting tightly-laced stays, disposes to it. Most of you may be familiar with Green's cases: two sisters presented curvatures in opposite directions, caused by sleeping together face to face, and who were cured by simply changing their position. If we could impress upon the nutrition of the concave side as much energy as is possessed by the other, we might be able by this means alone to remedy the evil; and the occasional disappearance of curvatures under improved health naturally leads to the employment of tonics, and other means likely to restore the destroyed equilibrium. Therefore we order change of air, salt and other bathing, frictions, flannel next the skin, muscular exercise, animal food, wine, bitters, bark, steel; varying them according to the case; according as the curvature coincides with a sanguineous or lymphatic temperament, a scrofulous or other diathesis.

But the treatment of curvature of the spine would usually be insufficient and incomplete, did we not change the physical conditions by which the unnatural form of the spine is maintained, and which, left to themselves, would constantly tend to increase the mischief—I mean the downward pressure. Two powers direct this pressure, the weight of the organs supported by the column, and the muscles by which it is inclined in different directions. To counterbalance these powers two kinds of means present themselves—

mechanical agents and muscular exercise. These means act as antagonists against the powers by which the spine has been flexed. The one equalizes or diminishes the pressure, the other gives the muscles increased power of resisting incurvation; but an association of both is the perfection of treatment.

Compression of the curvature seems to have been the first idea of mechanically relieving it, by bringing the curved portion nearer to the proper axis of the spine. Hippocrates indicates it, and Paré carried it a little further. A case in which this principle was carried out was described by Levacher, in the 17th century. Andrey recommended that it should be applied, by fastening within stays cushions to correspond with the convexity of each curvature. The apparatus of Venel and Van Gescher did not differ essentially from those of Andrey. In the apparatus of Joerg, compression is applied by means of an elastic band; but a kind of extension was also applied by means of a piece of wood covered with leather, which extended on the depressed side from the axilla to the hip (fig. 1.) Various modified, this

Fig. 1.



principle has been carried out with more or less success, the success depending more upon the sagacity with which the principle is carried out, than upon any abstract merit of its own.

All the means based upon this principle have a common inconvenience, that of struggling disadvantageously against the superincumbent weight, which more or less completely annihilates their action; and, having this serious disadvantage, they act only through the intermedium of the ribs, as was long ago pointed out by Levacher. Acting first upon the thorax they increase its deformity, and the action is not transmitted to the spine until the flexion and depression of the ribs can be carried no further. On the other hand, the discomfort and inconvenience attached to a cir-

cular compression, the danger even which may result to the chest, the abdomen, and the pelvis, does not in many cases allow of our employing a sufficient force to maintain the rectitude of the trunk. As applied to the loins this kind of pressure has still less efficacy. It is only recent lateral curvatures, those in fact which can be almost completely effaced by muscular action alone, that will yield to such means. It may, however, be sufficient to sustain the trunk in the intervals of more active treatment. But it has this serious disadvantage; it gives the muscles no opportunity of acquiring more power.

Some persons have been content to reject mechanical assistance, and to rely on the power of the muscles of the spine to work a cure. A century ago the study of the action of particular sets of muscles in particular attitudes had induced Andrey, among others, to recommend that when one shoulder was depressed, it might be raised by standing on the opposite foot, placing on the depressed shoulder, or under the arm of the same side, some slight burden. These attitudes may be useful when the position of the scapula is the consequence of habit, will do no good when the curvature is permanent, but may increase the evil, by adding a second curvature to the first. The opinion is still cherished and acted upon, that this kind of muscular action is alone sufficient to remove curvature, provided it act in a direction opposite to that which tends to increase the mischief. For the purpose of carrying out this treatment a variety of games have been invented. We have already seen that, in a majority of cases, the principle is essentially inapplicable. In a large number of cases the supposition of a default of equilibrium between antagonist muscles has no real foundation, unless we take the unequal prominence of the muscles of the two sides, caused by bony irregularity, for a true disproportion between these contractile organs. It is only in a few cases, therefore, that we have feeble muscles to strengthen on one side of the trunk more than another; and if the displacement of muscles do, sometimes, at length trouble their nutrition, and derange their action, these are effects which can only be effaced with the curvatures which have occasioned them. But we have not yet clearly made out either the influence of muscles on a curved spine, or their agency in producing it. These reasons have had their effect, and, in the present day, there are not many persons who seriously believe that we can cause the disappearance of a curvature by exercising the arm opposed to the convexity.

In the present day, when mechanical means are employed to remove curvature,

their use is based on a different principle to that we have considered; the principle now sought to be carried out is extension. It may be done by sustaining the trunk during station; it may be done while the patient is in the horizontal position, or it may be done by suspension. A great number of machines have been invented to raise and sustain the spine during station, some very complicated, others comparatively simple; all taking inferiorly a solid support upon the sacrum or the ilium, upon which they should be moulded so as exactly to be adapted to those parts, without compressing the abdomen. From this point one or many thin splints, placed along the spine, or at the side of the trunk, pass upwards above the head, or to the axilla; they should be capable of elongation at will. Those which extend along the trunk on the median line pass above the head, where they are curved, and from thence is suspended an apparatus to pass under and support the chin and the occiput. This machine used to be known formerly as the *Minerva*. In Heister's cross, improved by Bell and Shaw, as well as Chesher's, Stark's and Pfing's, the same principle is carried out. Those supports which do not extend beyond the axilla are more or less employed in the various stays used in the treatment of curvatures. These means have been adapted to chairs, couches, or other seats, upon which the patients rest. Those of Shaw and Bloemer are of this kind; and in many instances a short crutch, such as the following, is added (fig. 2.)

Fig. 2.



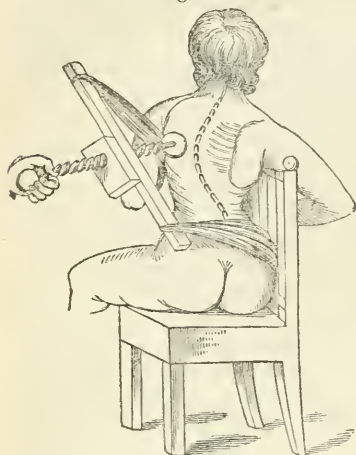
These various modes of supporting the trunk rarely completely counterbalance the tendency in the curvature to increase. They often painfully compress the soft parts around the pelvis. In some cases they press too hard on the lower jaw;

and the extreme mobility of the shoulders interferes with the usefulness of the axillary apparatus. The crutch support is unquestionably often useful; by it the inconvenience of compressing the pelvis is avoided, and it furnishes to the upper extremities a solid support.

The horizontal position has been much employed alone and associated with various mechanical contrivances, as a means of curing curvature. We usually refer to Darwin the idea of first suggesting it as a useful means of treatment. The Germans refer it to Wichmann. The French to Dauterney; certainly his suggestion was published in 1751. Wherever the first suggestion came from, so much must be admitted, that the plan was in general use in England long before it seems to have been employed in France. In 1788 Venel, of Lausanne, advised that mechanical means of extension should be associated with this position by day and by night. The horizontal extension was soon enthusiastically adopted in Germany, France, and England. I cannot, however, in this place enter into a description of the multitude of machines which have been invented for carrying out this principle; but the use of elastic means of extension, the credit of which belongs, I think, to Heyne, is a real improvement. Many persons, among others Shaw, Maisonneuve, and Pravaz, employed weights for the purpose of making the necessary extension, and in many cases they seem to act very happily. It is easy to understand the effect of the horizontal position in these cases; no other means so completely removes the pressure supported by the vertebræ. In a large number of cases we see, in a comparatively short time, a diminution of the deformity by position alone; but this attitude, long continued, has its inconveniences, and they were well pointed out by Shaw; but when the attitude is changed at proper intervals these inconveniences are much lessened; and this is the plan of treatment at present generally followed. You now understand that extending machines only serve to maintain the body in a certain position; they prevent that flexion of the trunk which would inevitably happen during sleep. Many reproaches have been attached to horizontal extension; among the many inconveniences attributed to it, some are purely imaginary, and others may be easily avoided by moderate care. When there is a single or predominant curvature, the extension may be made to act more immediately on this point, by bringing the extending power to act more directly upon it. In some instances, apparatuses for making pressure are associated with those

of extension in the horizontal position; such are the machines of Milli, Humbert, Heyne, and others. By this means a double indication is satisfied—they concur with extension to re-establish the form of the thorax; they contribute to straighten the spine. (fig. 3.)

Fig. 3.



We see that extension results from the incomplete suspension of the patient, either by the inclination of the plane on which he rests, or by contrivances which act upon the head or the axilla; but extension may be had by other means. At the latter end of the last century Lentin proposed

Fig. 4 and 5.



that the patient should suspend himself by the parts from a stick attached to a cord at a convenient height, or by climbing a pole; and this advice, long neglected, is become the basis of gymnastic treatment, which generally consists in a more or less complete active suspension of the body by the arms. The weight of the inferior parts of the body manifestly tends to straiten the spine, whether the patient be in the vertical or inclined position. Direct inspection of the curvature proves this; the large muscles of the trunk do not destroy this effect in sustaining the pelvis and the inferior part of the spine, because, although contracted, they are at the same time in a state of tension and manifest elongation. These things once understood, it is only to vary their application to accomplish particular indications. The Pestalozzian, Clasian, Amorosian, and other codes of gymnastic exercises, point out the appropriate means of attaining these results. These kinds of exercise do not simply act mechanically; they develop the muscular system; and employed alternately with those machines which require the horizontal position, they remedy the inconveniences of inaction which belong to the latter, while they in their turn relieve the fatigues of the gymnasium. All gymnastic exercises should be symmetrically employed, and if possible, simultaneously, right and left; not to establish an antagonism between the muscles of the spine, nor, as some authors believe, to give the feeble side a vigour which it has not lost, but simply to give the body the most complete rectitude, to prevent exaggerated flexion which will usually favour the extension of one or other curvature. Consequently we generally avoid constantly raising the depressed shoulder above the level of the other. The action of the extensors of the spine should be solicited by bending back the trunk. The lower limbs, which usually do little in these exercises, do most in those exercises where the body is maintained in a horizontal position. It is not one of the least of the advantages of swimming, that it gives activity to the lower limbs, as well as to the rest of the muscular system while vertical pressure is avoided; and, therefore, though no extension be made, it should be most strongly recommended in curvature of the spine. In Pravaz's and other beds a certain quantity of exercise of the limbs is given by various contrivances of drawing weights over pulleys, and so on, at the same time that we get all the good of extension and the horizontal position.

I do not propose to occupy your time by entering into a critical examination of the different machines, but shall content my-

self by stating generally, that those in which pressure and extension are combined, and can be associated with exercise, are the only means which should be employed; but that among the variety of agents in which this method can be more or less completely carried out, those should be preferred which take their support upon the pelvis, and which do not inconveniently compress the thorax. If these conditions be not accomplished, the evil increases, or, at least, time is lost which might have been beneficially employed.

The treatment of these affections is not so well directed any where else as in establishments specially directed to the purpose. It is true that in such institutions the treatment is often too mechanical, that permanent extension is too completely carried out, and that the confinement sometimes exercises a fatal influence upon the general health of the patient.

After passing in review so many remedial agents, it may be asked what is the general result of treatment. Well applied, it is, from the first moment, to elongate the body a few lines, and by the end of a month, if the curvature be a large one, from one to two inches. In the succeeding month, though less rapidly, yet equally steadfastly, the elongation continues until four, five, or six inches may be added to the height. At the same time we may have the happiness to see the curvature more or less completely effaced—the thorax resume its proper proportions; in a word, the conformation restored to nearly its proper character. The respiration, instead of being hurried, is tranquil; the circulation becomes less laboured, the digestion improved; the person more fleshy, the face more coloured, the muscular power increased—in fact, a marked improvement in the general health. But, however decided may be the good we accomplish, a curvature of the spine is scarcely ever completely effaced; a slight inclination will still remain. This extent of benefit being obtained, the spine should be still sustained and preserved from pressure until its constituent parts appear to be in a state to support the weight of the trunk, which should be gradually borne. We must never forget, that once curved the spine generally retains a tendency to reproduce it, especially in young persons; we must, therefore, remove every thing likely to renew it. Pregnancy requires great watchfulness, and, indeed, it is wise to recommend a persistence in the horizontal position during a part of every day, especially in the latter months.

OBSERVATIONS

ON

THE PREMONITORY SYMPTOMS OF INSANITY;

With Cases.

BY JOHN GRANTHAM, ESQ.

Surgeon.

[For the London Medical Gazette.]

In a former number of the MEDICAL GAZETTE (vide page 203, vol. I, N.S.) I endeavoured to set forth the importance of attending to the premonitory symptoms of insanity, and to awaken the attention of the profession to the neglected state of this subject, rendered still more imperative by the manifest ignorance betrayed in medical evidence relating to the phenomena of insanity. To render this inquiry as plain and useful as possible, I illustrated it with various cases in which both the moral and physical causes and effects of mania were considered. It is the object of this paper to detail still more minutely the premonitory symptoms of insanity, and especially such as present themselves in the generality of mental diseases.

The moral effects which demand attention may be classed under ten heads (and let me premise by asserting that all these moral effects may arise *pro tempore* without any fear of insanity; nevertheless I feel warranted in regarding them as worthy of attention in combination with the general history of a case:)

1. Undue suspicion,
2. Discontent,
3. Remorse,
4. Disaffection,
5. Revenge,
6. Indolence,
7. Excitement,
8. Unnatural activity in the pursuit of different objects,
9. Fearful apprehension,
10. Forgetfulness.

Not that I am intending to enter into any controversy on the merit or the demerit of phrenology; yet in this inquiry I feel it due to my own sense of justice to advocate the right use of the system in the investigation of moral causes. Phrenology teaches, first, that the brain is the organ of the mind, and is concerned in every mental operation, whether of emotion or intellect; secondly, that the brain does not act as a unit, but consists of a plurality of organs, each serving for the manifestation of an individual faculty of the mind;

thirdly, that the energy of function, or power of manifestation, is proportioned *ceteris paribus* to the size of the organ; or, in other words, that a large organ will, *all other conditions being equal*, enjoy a power of action proportioned to its size, and, consequently, manifest the corresponding faculty with greater energy than if it were small. Cuvier says, "Patanomie comparée en offre une autre confirmation dans la proportion constante du volume de ces lobes avec le degré d'intelligence des animaux;" thus admitting the influence of size of the cerebral organs upon the power of manifesting the mental faculties as distinctly as Dr. Gall himself could assert it. But, to prevent any misrepresentation, let it be observed that there is scarcely a phrenologist who does not utterly scout the notion of organic size being the only condition of functional energy. To demonstrate the evidence of organic size being *ceteris paribus* a measure of functional power, let any one look into the field of nature, and there examine the testimony of every anatomist and physiologist who treats of the relation between structure and function. The brain, in its functions, must be relatively studied in reference to the amount of muscular power in the body. Dr. Marshall Hall states, "That the cerebrum is, in its acts of volition, an exhauster of muscular irritability; that in muscles separated from their nervous connexion with the brain we have augmented irritability." It is admitted that insanity begins in the slightest departures from healthy feeling, and may be traced through every variety of shade to forms of severity, in which it is so evidently associated with an infirm, ill-judging, ill-reasoning, and perverted mind.

After examining the moral effects, the next step will be to ascertain the primary cause, and which will be found in the deranged function or diseased action of one or more of the various organs of the body. To descend to minutiae here would only be a tedious repetition of those pathological symptoms well known to the reader; yet it may be well just briefly to observe that the skin must be noticed with regard to its functions as an absorbent, exhalant, and regulator of the animal heat; the muscles, as to their action in reference to volition; the head, in reference to action and power; the blood, as to its condition and composition; the assimilative organs, in reference to diet and muscular power of the stomach and large intestines; and the glandular system, in reference to the supply of the nerves of organic life.

As far as I have prosecuted the diagnosis of the premonitory symptoms of insanity I have invariably found the exciting cause

to exist in the spino excito-motory system, and by sympathy to the brain. The primary cause or causes come under the appellation of depression, stimulation, and irritation. The fever that generally attends the early stages of insanity is of the congestive character. Congestion of the venous system is a state produced by the operation of common depressants, and marked by a diminution of the animal heat on the surface of the body, a diminution of the heart's action, and by a disturbance in the function of this or that organ which is the seat of congestion. The pathological inquiry must also be continued, first, in reference to predisposition; secondly, to disorder or deranged function; and, thirdly, to diseased action. The medical treatment called for in each case in which the mental disorder depends chiefly or entirely on some disordered condition of the heart, the liver, the stomach, the intestines, the uterus, &c., must, of course, vary in each particular case, and be conducted on general principles. In exemplification of the treatment it is my intention to publish those cases which may, in addition to the following, come under my observation.

CASE I.—S—l M—n consulted me March 31st, 1840; he was about twenty-six years old, of a middle stature, in temperament sanguineous. He complained of lowness of spirits, and inability to perform any of his usual duties; he lost all confidence in himself, and thought every one regarded him with distrust; his religious views became unsettled, and his confidence in the divine promises disturbed by the fears of his final perdition, which he thought must be his inevitable doom. He was a man of the strictest integrity, and esteemed as such by his employer, naturally of a lively and amiable temper, &c., &c. He left his business, which was that of a clerk in a notary's office, in London, in the month of November, 1839; he felt himself unwell, and consulted his medical adviser, who considering he had simple fever, made no restriction of diet or action: in a fortnight he resumed his employment, but the malady returned with increased severity: he a second time consulted his medical friend, who termed his case a nervous affection, and placed him under a tonic treatment of aromatics, camphor, &c., and wished him to leave the neighbourhood of London; before going away he was advised to have the opinion of another medical man, who approved of the plan pursued, and also stated it was necessary that he should leave town; he then went to the Island of Guernsey, and there sank into a state of deep melancholy: he there consulted a physician, who told

him to take much exercise, walk about, but ordered no medicine, stating it as useless. From thence he went to Jersey, where he suffered more depression of mind. After remaining some time in the latter place without benefit, he returned home, and a third time consulted his family medical attendant, who advised him to take a voyage to New York, but ordered no medical treatment: having a great reluctance to this advice, he came into the country to be under my direction. On examination he stated his inability to rest, with occasional dimness of vision, taste depraved, hearing good, the bowels inactive, urine pale, but unable to expel the last drops; muscular action defective, the skin dry, with occasional sensations of heat and cold, not general, but partial. On inquiring as to the original cause, I learned he had been washing his feet in cold water at night just before going to bed.

Treatment.—I ordered him to have the feet put into a hot bath at 100 degrees, composed of six table-spoonfuls of mustard in two gallons of boiling water, for fifteen minutes, at bed time; to use the flesh-brush to the skin in the morning; to remain quiet: the diet to consist of gruel for breakfast, mutton broth or beef tea, with bread, for dinner; no tea, and a gruel or arrow-root meal at seven o'clock in the evening; to abstain from fermented liquor and solid meat; to take twice a day Pil. Hydr. gr. v. and a Draught composed of Carbon. Sodæ, 5j.; Spt. Ammonia Co. 5j.; Pulv. Rhei, gr. vj.; Misturæ Camphoratæ, q. s.

April 2d.—He stated he had slept the whole night, such a circumstance as had not occurred during his illness. I requested him to continue the measures as stated—to take walking exercise, so as not to cause fatigue. I scarcely need observe that the partial paralysis of the muscles of the perineum were owing to defect in the internal pudendic nerve, which is supplied from the fasciculi of the fourth and fifth lumbar and three upper sacral nerves; this will lead to the exciting cause that the spino-excitomotor system was deficient in its supply of the power of organic life to the large intestines, kidneys, and, probably to the mesenteric glands, and through the medium of the muscular deficiency, exhausting the power of the cerebrum.

4th.—The animal heat more equally diffused; continues to sleep well; appetite improving, and feels less gloom of mind. Continue the medicine.

6th.—Improving; the evacuations becoming more healthy, and the skin inclined to perspiration towards the evening. Continue the medicine.

8th.—Still improving, especially as regards the mind, but feels great general debility; continue the pills until gentle ptyalism is produced; increase the diet: an egg with the breakfast. This system was continued so as not to produce prostration of the animal powers, increasing the diet as the mental faculties became natural, enjoining moderate exercise and mental quietude, avoiding excitement, until

May 14th.—The weakness now being confined to the back over the region of the fourth and fifth lumbar, and three upper sacral vertebræ, and legs, I requested him to use a cold shower-bath every morning, and resume his duties, which he has done, and is improving in strength up to the date of this paper, not having had a return of his melancholy feelings. The above case is an example of the good effect of the mercurial action combined with the alkali, (carbon. soda:) the former being an excitant and antiphlogistic, while the latter acts as an antiseptic.

July 7th.—I have heard he is deriving immense advantage from the cold shower bath as a tonic.

CASE II.—Wm. K—p, a painter and publican, applied to me in the year 1828: a stout, middle sized, dark complexioned man, he complained of pain and weight over the head, imperfect vision, loss of appetite, great debility, pulsatory sensation across the occiput, trembling of the hand, evidently from intemperance; his feelings were low and desponding; he wept on the slightest occasion; he wished for solitude, and yet feared to be alone, either suffering the most dreadful nervous irritability or sunk in the deepest despondency. The treatment consisted in enjoining an abstinence from fermented liquor, loss of about twelve ounces of blood taken in a full stream from the arm, and repeated mercurial aperients, which had the effect of restoring him to health of body and mind. From the above time to Dec. 28th, 1839, I lost sight of him, when I was sent for in haste, he having attempted suicide, and had divided a portion of the right parotid gland, and some arterial branches of a moderate size, so as to bleed rather profusely: since I saw him he had very much increased in flesh, from indolence of habit, as he had been out of work for some time, in consequence of an irritable disposition rendering him obnoxious to his employer; he had again drank freely of both beer and spirits. The membrana conjunctiva was inflamed; the pulse 120, and tremulous; pain in the hepatic region; distension of the stomach and large intestines; uneasy sensation over the whole of the dorsal vertebræ; paralysis of the right side of the tongue; neuralgic pains down the right side of the neck; urine scanty, high

coloured, depositing after standing a brownish sediment. After dressing the wound I ordered the patient to be kept on low diet, to remain in bed, and to take the following draught every four hours:—

R Magnesiæ Sulphatis, ʒiij.; Antimonii Tartarizati, gr. i.; Inf. Sennæ c. q. s. M. Haust. ʒiss.

Dec. 29th.—Had a restless night; very incoherent in his talk; pulse full. I took sixteen ounces of blood from the arm; ordered the aperient draught to be continued, with Pil. Hydr. gr. v. added to each dose.

30th.—Slept about two hours; bowels acting freely, the evacuations dark and very offensive; tongue white, and the edges uneven. Omit the Ant. Tart., and take a teacupful of beef tea in the day.

31st.—The pulse 90; more natural; the mind is becoming tranquillized; the vision still imperfect; complains of a noise in the ears, with tenderness in the right side. I now determined on continuing the mercury until gentle ptyalism ensued, with a spare diet, perfect quietude of mind and body, forbidding all conversation. The state of mental stupefaction in which he was when he committed the act was after a few days succeeded by feelings of the bitterest remorse and contrition; nothing could pacify his self-accusations for having attempted so horrible a deed, until I explained to him that his crime was itself an almost involuntary act, depending upon his deranged health, and that it was his previous ill conduct and intemperance which had induced the attempt: he said “he had not been well the last six or seven months past, frequently wandering he knew not where, until hunger or fatigue roused him to reflection; and at other times shunning the society of friends, and stupifying himself in the corner of some public-house-tap room, imagining that every one distrusted him, and regarded him as unworthy of their friendship.” My reasoning with him in endeavouring to convince him that health of mind was dependent on health of body, seemed to inspire him with hope, and allowed of my furthering the medical treatment, which was continued by attention to the sanguineous system and *prima viæ*, by removing the inflammatory condition of the membranes of the brain, with the mercurial and alterative treatment.

Feb. 14th, 1840.—I took my leave of him, after assuring me how gratefully he felt for his restoration to health of mind and body.

Crayford, Kent, August 20, 1840.

OBSERVATIONS

ON THE

DISEASE LETHARGUS:

WITH CASES AND PATHOLOGY.

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THE attention of the medical profession was, I believe, first directed by Dr. Winterbottom to the frequency and often fatal termination of the disease termed *lethargus* on the western coast of Africa; but the description given in his work, both of the symptoms and treatment, is much too meagre for practical purposes. As deductions leading to a sound and rational mode of treatment can alone be drawn from an attentive, patient, and minute investigation of the pathological appearances presented, the following observations, with cases and pathology of this most interesting disease, founded upon my own experience as Surgeon to the African Hospital at Kessy, in the colony of Sierra Leone, will not, I trust, be uninteresting, or deemed a work of supererogation.

Dr. Mason Good, in his work upon the Study of Medicine, has placed this disease among the class *Neurotica*; but, as developed in the cases which have come under my notice, I submit that it may be classed under the variety *Cataphora*, or short remissive lethargy.

Causes of disease.—Lost balance of circulation, inducing irregular distribution of blood, and venous congestion; depressing mental emotions; severe bodily labour; unwholesome, scanty diet; repelled eruptions; suppressed evacuations; perhaps functional derangement of the nervous system, producing insufficient action or energy to resist the approach of sleep, even without its concomitant existing causes.

Symptoms.—On first approach of the disease the patient is observed to become fat, the demand for food being inordinate. When the disease has, however, existed for some time, the appetite declines, and, in the latter stages of the complaint, the patient emaciates. Uncontrollable desire to sleep, the patient often falling asleep in the act of conveying food to his mouth. Sometimes squinting and convulsions may be observed. The glands

of the neck become tumefied; but this is by no means always present.

The negroes call this disease sleepy dropsy, and, after it has progressed, never attempt its cure, giving over the patient as incurable; but, in the first stages, they endeavour to cure it by inducing copious perspiration.

Some European doctors, conceiving the disease to be induced by debility, have administered various stimulants, such as camphor, musk, valerian, blisters, sternutatories, metallic tonics, as sulphate of zinc, &c. The powerful agent, galvanism, has been also employed. Others, I imagine with more propriety, have viewed the disease as originating from congestion of the brain, and have sought its cure in the employment of local depletory measures, and of keeping up an action of the bowels; but it appears to me that medical men have been deterred from the judicious employment of general bleeding by an unfounded apprehension of danger from debility; nor would it appear that the potent remedy mercury has ever been called in to exert its powerful influence in equalizing the circulation; indeed the practice I imagine to be novel. An esteemed and experienced friend of mine, holding the chief civil medical appointment in this colony, has informed me that he has repeatedly tried it with a view to induce ptyalism, but without effect. Another medical friend, of long standing and experience in the colony, told me that he had treated the disease repeatedly, using blisters and drastic purgatives; but neither of these gentlemen appears to me to have sufficiently appreciated this medicine (mercury). Dr. Bacon, a gentleman practising at Cape Mesurado, the American settlement on this coast, remarked to me that the disease is of frequent occurrence there, accompanied in its progress by a low type of typhoid fever; but this I have never observed in any of the cases which have come under my notice. Dr. Winterbottom observes, that the slaves from the Bight of Benin are the most subject to it, and that it prevails much among the Foulahs. I have observed it also equally to prevail among several other tribes inhabiting parts of the continent far inland. I have chiefly seen it among the liberated Africans, of whom there are sometimes from 400 to 500 at one time in the hospital under my charge; and I have

been informed that several cases have occurred even among the Creole inhabitants.

CASE I.—On the 7th April, 1839, Mary Coker, æt. 14, an apprentice from Waterloo Village, a native of Benin, was admitted to hospital. States that about three months ago she was attacked by sleepy dropsy, (country name), or lethargus, for which she was treated by the natives, but without mitigation or the slightest alleviation of the symptoms. She is of a stout plethoric habit of body; general appearance that of an individual roused from sleep, the face and eyes being devoid of animation—almost of expression; wears a besotted look; the skin is dry, and above natural temperature; pulse 108, and small; bowels costive; tongue clean about tip, but towards root and in middle coated with a greyish fur; during the day she continues drowsy, and will fall asleep while taking food.

℞ Emplast. Vesicator. 7 × 4 inches. Apply from occipital protuberance along the spine:

℞ Ext. Colocynth Comp.; Submur. Hydrarg. aa. gr. xij. Divide in pil. No. vj. One every two hours until the bowels are freely opened.

8th.—Bowels open; alvine evacuations natural; during night she removed the blister; it had partially risen; skin cooler.

Re-apply blister.

℞ Calomel ℥j.; Pulv. Ipecac. gr. x.; Opia. gr. ij. M. Divide in pil. No. vj. One of the pills every three hours.

April 9th.—Blister has risen well; bowels open once; a lumbricus about eight inches long discharged; the urine is secreted sparingly in quantity and is highly coloured; does not however coagulate on application of heat; skin of natural temperature.

10th.—The mouth has become affected with the mineral; her bowels have been twice opened; micturated once in the space of 36 hours: the same lethargy oppresses and weighs down both her physical and intellectual faculties: pulse 94, small and quiet.

Let the mouth be gargled with

℞ Solut. Chlorid. Sodæ, ℥i.; Aquæ font. ℥xv. M. Fiat solutio.

11th.—No change.

12th.—Considerable amendment in appearance, which is more lively than since her admission; bowels have been severely purged; appetite good; but it being desirable to keep up a brisk action from the intestinal tube, I gave

℞ Aloes Socot., Ext. Colocynth. comp. aa. gr. xij.; Calomel. gr. xij. M.

Divide in pil. No. vi. One every three hours.—Continue the wash for the mouth.

14th.—Vast quantities of fæces have been discharged by stool, dark coloured, highly offensive, and stringy, as if from the tenacity of intermixed bile. During the night she was buried in the most profound sleep. Pulse 112, small and quick; tongue much loaded at base; the secretion from kidneys sparing, and on application of heat a film of albuminous-like coagula floated on surface: about abdomen, particularly in epigastric region, there is some distension as if from flatus: appetite good.

R Bitart. Potassæ. ʒi.; Aquæ font. ℥ij.
M Ad libitum.

To discontinue pills, and the bowels to be kept kept open with

R Sulph. Magn. ʒij; Aquæ font. ℥ij.
M. A wine-glassful every four or five hours until the bowels are opened.

16th.—Bowels freely open; says she feels less inclination to sleep: about half a pint of slightly turbid urine passed in the course of the 24 hours.

18th.—Pulse 120, quick but small; appetite good; tongue clean round the edges and at tip, but base covered with grey sordes; her general appearance more lively than on previous days.

19th.—Bowels open, but evacuations sticky: during day she walks about the yard and ward, occasionally conversing with girls of her own age, but more frequently moves about without noticing surrounding objects. She has never been observed to laugh since her admission, and often drops asleep after very slight exertion. Urine sparingly secreted. She has continued to use the Solut. Bitart. Potassæ, and as a purgative a solution of Sulph. Mag.

Continue wash for mouth. The diet to consist of soup with arrow root, or well boiled sago and a small quantity of wine.

20th.—Several lumbrici, from eight to nine inches in length, were found in alvine evacuations.

R Ol. Ricini. Terebinth. aa. ʒss.; Sp. Piment, ʒi. M. Statim sumend.

21st.—She is greatly emaciated; bowels well opened by the medicine; pulse 118, small and quick.

R Sulph. Quininæ, gr. vi.; Infus Quassia, ʒij.; Sp. Vin. Rect. ʒi. M. A wine-glassful three times a day. The mouth and gums being still tender and spongy, continue wash for mouth.

22d.—A lumbricus came away this morning. The irresistible disposition to sleep cannot be better described than by noticing the fact of her dozing at the moment I was noting her case, although aroused the mo-

ment before to put some questions to her. The urine is still secreted very sparingly.

R Ol. Terebinth. ʒi.; Sol. Gum. Arabic, ʒi. M. Statim sumend.

26th.—On the 23d she passed a lumbricus; the bowels have been opened two or three times daily: tongue clean at tip and round edges, but towards the root loaded with greyish coating: pulse 100, small and quick: no improvement of lethargic symptoms. When dozing I have repeatedly held a candle close to the eye, the pupil remaining fixed and staring. About epigastrium there is distension, but no sense of pain is experienced on pressure: call to pass urine is seldom oftener than three times in the course of 36 hours.

R Emp. Lyttæ to epigastric region.
—Continue Infus. Quassia c. Sulph. Quininæ. To be used as formerly.

Her strength to be supported with light nourishing food.

27th.—She appears better. At the same time during the night she attends to the calls of nature, while formerly they frequently passed involuntarily. Quantity of urine is now very considerably increased, amounting to eleven ounces in three hours.

28th.—Has removed blister from abdomen; appears lively. The bowels to be kept open by

R Submur. Hydrarg. Ext. Colocynth. comp. aa. gr. iv. M. Divide in pil. No. ij. One to be taken immediately, and the other six hours thereafter, if the bowels are not previously acted upon. Let the blister be reapplied.

29th.—Blister has risen well; pulse small, 116.

Continue Infus. Quassia c. Sulph. Quinin.

May 2d.—Alvine evacuations more natural: the feet and legs slightly œdematous.

R Liniment. Sapon. ʒij. The feet and legs to be embrocated, and to be then bandaged from toes to knees.

4th.—General appearance bad: alvine evacuations bilious, mixed with frothy-like mucus; quantities of undigested food contained therein; drowsiness evidently on the increase.

5th.—To-day she was asleep when I entered the ward. On light being brought close to pupil it remained uncontracted.

6th.—No change.

7th.—Pulse full, 106; breath is highly fœtid; general aspect improved; has, however, slight dyspnœa, attended with cough, and complains of pain under left breast. On applying the ear to chest the respiratory murmur was distinctly crepitous: feeling of hardness about epigastrium has disappeared.

R Emplast. Lyttæ. 4 × 4 to chest.
 R Tinct. Camph. Comp., ℥iv.; Antim.
 Tart., gr. ij.; Aquæ Font., ℥viii. M.
 A table spoonful every three hours.

8th.—To day the blister has risen well: she appears, however, weak. No expectoration; breath extremely fetid; pulse 100.

9th.—Before visiting hour was told by matron that she was dying. At 7 A.M. she expired.

Autopsia, two and a half hours after death.—

Body not much emaciated. *Head*: Arachnoid membrane thickened, firm, and opaque. Substance of brain, when cut into, was closely dotted over with blood-vessels. About one dram of serum present in lateral ventricles, and at base of brain half an ounce of same fluid was effused.

Thorax: Some effusion between pleura of right side, which was thickened and highly vascular. Lung of same side had a dark and florid aspect: a gangrenously fetid and melanotic-like fluid covered a great portion of inferior and middle lobes: the inferior lobes slightly adhered to diaphragm. A pretty copious secretion of purulent matter, intolerably offensive, has poured out on that portion of diaphragm where adhesion existed, which being removed it was found roughened. Corresponding surface, to the extent of an inch and a half, was of a dark colour, evidently from infiltration and inflammation. *Heart*: Heart of natural size: on laying open its cavities large portions of coagulated lymph were found filling up the ventricles and passing into arterial tubes. There was considerable deposition of fat on parietes.

Abdomen: Peritoneum pulpy, and crowded with small blood vessels holding florid blood. Omentum contracted, having a considerable accumulation of adipose tissue. Stomach at its greatest curvature had a blush of redness. A lumbricus* was found in cavity measuring eleven inches in length. The contents of upper portions of intestines were dark coloured and semi-fluid: fæcal matters of similar colour were found in colon. Patches of ulceration were discovered in both great and small portions of tube. Lumbrici, varying from two and a half to eleven inches in length, occupied the canal, and were situated both in duodenum, ileum, and colon. *Liver*: Gall bladder green externally, and impacted with very green ropy bile, otherwise healthy. Weight of liver two pounds two ounces. *Kidneys*: Kidneys healthy. Coats of bladder thickened and contracted.

On laying open the spinal canal a good deal of blood was found diffused at inferior cervical and dorsal regions; the neuro-

lemma of cord had a yellowish-like lymph deposited on surface, which appearance could be observed more especially towards its termination. On carefully removing the sheath a beautiful network of vessels was seen ramified throughout the whole length of cord.

CASE II.—Sara, a fine intelligent and lively boy, ætat. 10, a native of the Soosoo Nation, was received into hospital on the 17th of April, 1839, from on board the Portuguese schooner, "Labrador," affected with glandular swellings of both sides of neck, for which he was treated with iodine ointment, to which treatment they yielded. Bowels regulated by gentle purgatives. A few weeks thereafter he began to lose flesh, his appetite at same time declining. On the 2nd of May he was first observed to drop asleep while eating: on being roused he was seized with a universal tremor, the motions of his head resembling the symptoms produced by inebriation, the eyes bloodshot, pupils staring, look meagre and emaciated. Bowels costive, tongue white and loaded, pulse 84, skin below natural temperature.

Applicentur Hirud., No. xxx. temporibus. Bleeding to be encouraged as much as possible by flannel cloths dipped in warm water, then wrung, and applied as hot as possible, which are to be renewed at intervals.

R Spir. Vini. Rect. ℥ij., Aquæ Font. lb. ij. The head to be kept constantly wetted by means of pledgets moistened with the lotion.

R Emplast. Vesicator. from occipital protuberance along the spine.

R Pulv. Jalapæ, gr. x., Calomel, gr. iv. M. Statim sumend.

These active measures, with repeated large doses of oil of turpentine (which certainly brought several worms away) conjoined, and the production of salivation, with the occasional use of the sulphate of quinine, combined with infusion of quassia, alleviated, although they failed to arrest, the progress of the malady, which terminated fatally on the 2nd of June.

Post mortem Examination two hours after death.—Body much emaciated. *Head*: Skull cap with great difficulty torn from dura mater, to which it firmly adhered round the corona: about four ounces of blood, mixed with serous fluid, escaped on its removal: the skull itself appeared more than usually dense: minute injection of the arachnoid membrane; great engorgement of the vessels distributed over the convolutions; grey substance of brain of a rather paler colour than natural; choroid plexus pale: serosity between the convolutions. The ganglions of grey substance, corpora striata, and optic thalami, were

* These parasitical intruders were found alive after removal from body.

softened. In the ventricles a small quantity of fluid was present: the principal arteries at base were enlarged and turgid. *Thorax*: A good deal of serum was found between pleura on opening thorax: the inferior lobe of left lung was found to cohere to superior surface of diaphragm to the extent of a half crown piece, where a yellowish exudation was abundantly poured out, and which was discovered to exist in considerable quantity about root of lung. Surface of lung was rose-coloured, from excessive congestion; on being cut into a reddish-like fluid oozed from every part. Right lung was also much engorged; pericardium collapsed; heart much loaded with fatty deposit, but of natural size. *Abdomen*: Stomach highly vascular between its great curvature and pylorus: intestines presented very considerable traces of inflammation in some points; spleen slightly enlarged; several lumbrici were present in small intestines; liver healthy; gall bladder filled with dark green bile; peritoneum exceedingly vascular; cortical substance of kidneys highly injected.

On sawing and chiselling out the vertical column to its termination, a considerable quantity of blood was found effused over cervical and dorsal aspects. Blood-vessels filled with blood were seen everywhere ramified in an exceedingly beautiful congeries of network over structure of cord.

CASE III.—John Silver, a liberated African of the Ackoo Tribe, ætat. 14, was sent to hospital on the 9th June, 1839, affected with lethargus, by which he was first attacked about three months previous to admission. When seen by me he lay upon his back in a state of stupor; pulse 90 and full; on application of light to pupil it remained uncontracted: on being roused he articulates with difficulty: he complained that he felt pain at lumbar sacral junction; expression of countenance stupid and vacant; the eye is bloodshot and listless; bowels open; tongue moist, clean at tip, but at base covered with green sordes; respiration natural; skin of natural temperature; slight rigidity of muscles of arm, accompanied by spasmodic motion of the fingers, with occasional slight jactitatory motion of the body; feet cold; says he passed several lumbrici prior to admission; states that he has not made water for many hours previous to admission.

Applicetur Cucurbitula to portion of spine complained of. Head to be shaved, and then apply thereto, so as to cover the scalp—

R Emplast. Lytta 6 × 4.

R Pulv. Jalapæ. gr. x., Calomel, gr. v. M. Fiat Pulv. No. i. statim

sumend. Let his strength be supported with thin soup, arrow root, and aggidu, to which he is extremely partial.

Vespere.—In the same profound coma. Pulse 104, and full; skin hot; medicine has not operated. Flannel cloths to be immersed in boiling water and applied to feet and around ankles; but although the application had the immediate effect of rousing him, the relief was not permanent. The skin was slightly vesicated by the high temperature.

R Ol. Terebinth. ʒj., Mucil. Gum Arabic. ʒss. M. Fiat haustus. Statim sumend.

June 10th.—During the night he lay on his back, from which posture he did not move. Blister applied to head has risen well; seven lumbrici, varying in length from four and three quarters to eleven inches, were evacuated: the fæces were of a dark green colour, being intermixed with a considerable quantity of mucus; in the course of twelve hours ʒv. of urine of a very high colour was passed; pain in back gone; complains of pain about left trochanter major, where there is some slight swelling.

R Submur. Hydrarg., ʒi., Pulv. Opii, gr. iss. M. Divide in Pil. No. vj. One of the pills every hour.

R Tinct. Sapon., ʒi. Embrocation to thigh.

Vespere.—Pulse 120, and full; skin hot; ʒiv. of urine of a pale yellow colour passed in the course of eight hours: during the day he would occasionally awake and converse with boys of the same age in the ward.

R Subcarb. Potassæ, ʒij.; Mist. Camphor. ʒij.; Antim. Tart. gr. ij.; Aq. Font. ʒviij. M. Fiat mistura; ejus sumat cochleare magnum quaque tertiâ horâ. The skin to be sponged with vinegar and water; pledgets, moistened with water, to be constantly applied to head; bottles of warm water to feet.

11th.—Pulse 80; skin cool; tongue clean at tip, but loaded with a grey fur towards base; gums swollen and tender; countenance mild; articulates with difficulty, but returns appropriate answers to interpreter; appetite improved; does not complain of pain; respiration natural. On applying ear to chest, the action of heart was violent, the impulse being extended over a considerable portion.

Pills to be discontinued.

R Solut. Chlorid. Sodæ, ʒj.; Aquæ Font. ʒxv. M. Fiat Solutio, with which the mouth is to be repeatedly gargled. A large blister to the calf of

each leg. The application of cold water to the head to be persevered in. Cold water also to be poured on the head from a tea kettle. Continue Mist. Diaphor.

12th.—Pulse 120; skin bedewed with a copious perspiration; blisters have risen well. At the evening visit the countenance was natural, and more lively: during the day he ate some fish, which he appeared to relish.

13th.—Makes no complaint; pulse natural and soft; tongue white and moist; extremities cold.

Apply bottles of warm water to feet; cold application to head to be continued; discontinue Mist. Diaphor.

14th.—Skin cool; pulse, although quick, is regular; bowels costive.

R Ol. Terebinth. ʒi.; Mucil. Gum Arabic, ʒss. M. Fiat haustus.

15th.—Bowels open; evacuated several lumbrici: the discharge consisted of pure bile: the bedding has a urinous smell, from the involuntary discharge of urine.

16th.—Urine and fæces passed involuntarily; wine ordered ad libitum, but he continued to sink, and died at 2 o'clock A.M. of the 17th.

Post-mortem examination five hours after death.—Emaciation considerable. *Head:* The calvarium and dura mater being removed, the blood-vessels passing between dura mater and brain were found enlarged to the size of a crow's quill; retiform injection of the pia mater; a little serosity between membranes. On slicing the brain, many bloody points were discovered, closely congregated, both on medullary and cortical substances; investing membranes of ventricles highly vascular. Nothing particular in the cerebellum. Spinal marrow not examined. *Thorax:* The lungs were slightly congested, and of a rose colour. Deposited on inner and inferior aspect of left lung there was considerable effusion of yellowish lymph; heart enlarged, having its walls thickened; fibrinous clots were found in auricular and ventricular cavities; its parietes were loaded with fat. *Abdomen:* Stomach, at upper curvature, highly vascular; omentum loaded with fat, having its vessels highly injected with blood; liver, on being cut into, was found turgid with blood; gall-bladder loaded with dark green bile similar to what had passed by stool; intestinal canal contained the same coloured fluid, with here and there hardened scybala; four worms, from four to twelve inches in length, were also found; spleen of middling consistence, between the state of health and degeneration; blood-vessels of kidneys completely gorged with blood; bladder contracted.

CASE 4.—Thomas Caperhill, a Creole boy, æt. 14, was admitted into Hospital on the evening of the 6th July 1839, affected with the decided and far advanced symptoms of lethargus. I was informed by the person who brought him to hospital that he was an orphan, his parents having died about six years ago, leaving him to the tender mercies of an individual residing at the village of Wellington, by whom he had been employed to cultivate his farm on the banks of the Quia River, at a distance from the residence of his assumed protector. From the same source I learnt that he had been attacked by the disease about five weeks prior to admission, and that no remedial means had been employed to check its progress. When seen by me he lay upon his back steeped in deep lethargic sleep; expression of countenance fatuous; skin rather hot; pulse small and irregular: tongue (which he had difficulty to protrude) covered at its base with grey sordes; bowels costive; respiration slightly crepitous; impulse of heart heard over a large space; pupils contracted: articulation indistinct and hesitating; spasmodic rigidity of upper extremities; feet cold.

Let the head be immediately shaved, and kept constantly wetted with cold lotion, pouring at intervals a stream of cold water over the head. Blisters to calves of legs. Apply boiling water by means of flannel cloths to feet and round ankles.

This application roused him, but the benefit was not permanent.

R Ol. Tiglii, gtt. i.; Calomel, gr. iv. M. Mor. sol. Fiat pil. No. i. Stat. sumend. Bottles of hot water to feet and legs. Let his strength be supported with arrowroot given at short intervals.

July 7th.—Blisters have risen well; bowels open, stools consisting of hard and dark coloured fæces; reclines on his back; pulse small, weak, and intermitting; urine discharged involuntarily; the skin around feet and ankles is slightly vesicated, the result of application of hot flannel; extremities cold.

Let the feet and ankles be dressed with

R Ol. Lini. Aquæ Calcis. aa. ʒiij. M. Continue cold lotion to head. Apply warmth to extremities by means of bottles of hot water. Wine to be allowed at short intervals.

During the night he expired.

Post-mortem examination two hours and a half after death.—*Head:* Skull cap with much difficulty separated from dura mater; a very large portion adhered very firmly to calvarium, so as to be removed along with it. Engorgement of the vessels which ra-

mify in convolutions; general injection of the arachnoid, which was red and thicker than natural. Both cortical and concretious substances very red. To choroid plexus of left side there was a small hard tumor attached, of an oval shape and of a dark ash colour. Several ecchymotic spots on lateral parts of middle lobes. On the internal and external sides of olfactory groove of left hemisphere there was considerable ramollissement. Vessels ramifying on circunvolutions of cerebellum engorged. Spinal cord much congested; investing membrane of a rose colour. *Thorax*: Lungs were of a light rose colour, and congested every where with dark blood. Heart filled with very dark coloured blood. *Abdomen*: Omentum loaded with fat; minute injection of peritoneum; liver much gorged; gall bladder filled with very dark tarry-like bile; intestines filled with matter of a very dark green colour, being mixed at lower portion with hardened scybalæ; several lumbrici were also found among their contents. At upper third of jejunum there was an ecchymotic spot about the size of a half-crown piece; kidneys much loaded with fat, the cortical substance being engorged.

Autopsia of a boy of the Bacongo tribe, æt. 16, who died 14 days after admission to hospital, but whose case I did not note down.

Head: Calvarium being removed, a great quantity of very dark coloured blood escaped. The dura mater was infiltrated with some fluid, which ablution failed to remove; glandulæ pacchioni enlarged; effusion of lymph over arachnoid membrane. On slicing the brain streaks of blood were observable; the ventricles were filled with bloody serum; choroid plexuses were turgid, small vesicles appearing on their structure. Over the corpora striata blood-vessels ramified in arborescent form: the circle of Willis was well marked, from the great turgidity of vessels; a netting of blood-vessels stretched over the pons varolii; the cerebellum and its coverings were equally congested. *Thorax*: On opening the thorax both lungs were found engorged; considerable adhesions to pleura costalis; pericardium collapsed; the heart was enlarged, its walls being thickened. On making a section through right ventricle, fibrinous clots three inches and a half in length were discovered, of very dark coloured blood; coagula filled the auricles. *Abdomen*: On opening the abdomen, the liver was found enlarged and of a purple tint, some parts of its structure being infiltrated with bile. The gall bladder was distended with bile of a tar-like consistence and colour. The omentum was contracted and thickened, tinged of a yellowish hue; the stomach contained a glairy fluid, the mucus being dotted over with grumous coa-

gula; the duodenum was also much studied; intestines being removed from body, washed, and slit open were found filled with lumbrici and hardened scybalæ; spleen softened; kidneys were normal; bladder thickened, and distended with urine.

In the case of a boy, æt. 14, of Akoo tribe, who was admitted to hospital on 2d September, 1839, and who had been ill for six weeks prior to admission, dissection revealed sanguineous infiltration of cerebral substance, thickening of dura mater, and several spots of a black colour scattered over its structure. Along the course of longitudinal sinus it was marked of a brownish blue colour. Lungs were found with tubercles in first stage; hypertrophy of walls of heart. Several lumbrici were found in the intestinal canal, at its upper portion.

Dr. Copland, in Part II., section 25, page 345, of his valuable Dictionary, observes that in the dark races of man, worms, especially lumbrici, in the intestinal canal, are frequently connected with the origin of many maladies of remote but related organs; affections of the stomach, diarrhœa, colicky pains, &c. &c. very often arising from this cause. Those parasites, it will be noticed, were found in great numbers to be present, both during and after life in those cases.

In conclusion, I hope it will be conceded, that if the practice pursued in those cases proved unsuccessful, that circumstance may with propriety be accounted for from the advanced stage to which the disease had arrived prior to admission, or to its being subjected to medical treatment.

In Mary Coker's case the right lung weighed 14½ oz.; left lung, 5 oz.

In the case here alluded to the weight of brain was 3 lb. avoirdupois; liver, 2½ lb.; spleen, 9 oz.

AN INQUIRY INTO SOME OF THE CONSEQUENCES AND CAUSES OF FAILURE
OF THE
NEW OPERATION FOR THE CURE
OF STRABISMUS OR SQUINTING.

By E. W. DUFFIN, Esq.
Surgeon.

[For the London Medical Gazette.]

[Continued from page 943.]

Much diversity of opinion certainly prevails in regard to the functions of the oblique muscles of the eye; but if

we dissect them with very great care to their insertions, we must admit, whatever else we may call in question, that the direction of their fibres, as well as their ultimate attachments, warrant the conclusion that the function of the superior oblique is to roll the eye inwards and downwards, and that that of the inferior is to rotate the organ in the opposite direction. When both muscles contract at the same time, the effect will be to bring the eye forwards, and render it a little more prominent; thence proceeds one of the common results—increased fulness of the eye, when the adductor is divided.

But in what manner the superior oblique can assist in rotating the globe upwards and inwards, as Sir Charles Bell, Dr. Franz, and others have imagined, I am at a loss to comprehend. Were it indubitable that Dr. F. divided the tendon of the superior oblique in his operation, the result he relates would, of course, be conclusive that this muscle does by some means or other contribute to the performance of the movement in question.

The following case, an exceedingly instructive one, affords ground for believing that the only muscles requisite to enable the eye-ball to move diagonally upwards and inwards, *i. e.*, towards the nasal process of the frontal bone, are the superior rectus and the adductor; although it is possible that the superior oblique, by rolling the globe downwards and inwards, may contribute slightly, in some individuals, in causing the pupil to approximate the inner canthus, but certainly not in directing it upwards. A man presented himself for operation who squinted in a most remarkable degree with the right eye, in the manner we have been discussing, *viz.*, upwards and inwards; so much so, indeed, that, when the eye was at rest, fully a fourth part of the cornea was concealed from view. The gentlemen who examined this case previous to operation, *viz.*, Dr. J. C. Williams, Mr. J. N. Thompson, of Nottingham, and Messrs. Smith and Walker, surgeons in the immediate neighbourhood of that town, were all convinced that either the superior or inferior oblique muscle was implicated in producing the deformity. From what I had experienced in similar cases, I was of opinion that the position of the eye proceeded from the conjoint operation of the superior rectus and adductor only,

the former pulling the globe upwards, whilst it was unnaturally tethered or bound down by the latter. On dividing the tendon of the adductor, and completely liberating the eye from all confinement on its inner aspect, it immediately darted directly upwards, so that one-third of the cornea was concealed under the superior palpebra, and the pupil was restored to the natural central line, but, of course, much above its proper situation. In this position the eye remained fixed, unless the patient made an unusual effort to look downwards, which he could never so effectually accomplish as to make the axis of the two eyes correspond, and obviate double vision. On the third day after the first operation I divided the tendon of the superior rectus by cutting down upon it anterior to where that of the superior oblique passes under it. This I did in the manner that I usually perform the operation on the adductor, by inserting a flat blunt hook underneath, and then snipping it across with a pair of scissors. The pupil immediately afterwards descended to its proper position in the centre of the orbit, vision became single, and the case went on satisfactorily in every respect afterwards. I have met with numerous other instances of precisely the same description, as regards the direction of the pupil upwards and inwards, but never in any other case found it necessary to divide any thing but the tendon of the adductor, and to liberate the eye from such abnormal connections as I have described, that tended to confine its inner aspect. When in the course of an operation, after cutting across the band of tendinous fibres by which the adductor muscle is inserted, the eye has been turned upwards and inwards, or in the contrary direction downwards, and towards the nasal canthus, I have always found some adventitious adhesion to be the sole cause of the movement, the contraction of the superior or inferior rectus not exceeding that which was natural to them, but productive of an irregular effect because exerted on a tethered globe.

We have stated that one of the immediate effects of the operation is a trifling projection of the eyeball; the extent, however, to which this occurs is very variable, and depends, I conceive, much upon the manner in which the division of the tendon has been accomplished.

When the operation has been performed without injuring the conjunctival and other coverings more than is absolutely essential, the increased prominence of the eye that results is scarcely appreciable, and, in some instances, cannot be at all detected.

If, on the contrary, the eye has been liberated by submitting the sclerotic to a clean dissection by means of the forceps and scissors, and the investing membranes have been removed to an unnecessary extent, the globe is much more liable to start forward than when attention is paid to preserve the appendages and unoffending textures entire.

If, as frequently happens, the faulty eye is of somewhat less dimensions than its fellow, this mode of performing the operation merits, perhaps, a preference. But if, on the other hand, the faulty eye be the largest of the two, a circumstance of equally frequent occurrence, then it is of the utmost importance to perform the operation in such a manner that all the natural attachments not concerned in the production of the deformity shall remain uninjured. This mode of proceeding, moreover, is in general too severe, and, when no attention is paid to preserve the semilunar fold of the conjunctiva, destroys the natural beauty and finish of the nasal canthus, substituting in its stead a gaping cavity, and a widened state of the inner angle, often so unsightly in appearance as to attract the notice of even a casual observer. When the circumstances of the case, then, lead us to select the operation by the forceps and scissors, care should be taken to preserve all those natural appendages of the eye on which its elegance and symmetry depend.

Another objection that I have found to proceed from removing more of the conjunctival covering than was essential to admit of a perfect division of the structures which hold the eye bound in its unnatural position, is the protracted manner in which the work of restoration is afterwards carried on, and the difficulty of restraining the exuberant growth of the reparative granulations. Indeed, this is such that they occasionally withstand the application of escharotics, and require to be removed with the forceps and scissors, a measure which, though productive of very trifling pain, always creates dissatisfaction. In a surgical point of view, perhaps, this

may not be a matter of very great import; but children and nervous timid persons are with difficulty persuaded to submit again to what has to them the appearance of a second or third operation. Another objection to this mode of operating is the necessity of fixing the eyeball by means of a sharp hook passed through the tunica albuginea, which not only gives considerable pain, but, in refractory patients, is liable to pierce and lacerate the sclerotic, or even to injure the retina.

But these are minor evils compared with sloughing of the eyeball and total loss of vision, an occurrence which I know has happened when a clean dissection has been rather too extensively made of the sclerotic. Under all these points of view it appears to me a matter of great importance to separate or destroy the conjunctiva and other membranous attachments as little as possible, and to confine the operation, when practicable, to a simple free slit through the conjunctiva and subjacent coverings down to the tendon, and to separate this latter by means of a blunt hook underneath, passed as first recommended by Mr. Bennett Lucas, previous to cutting it across with a pair of scissors inserted between the convexity of the hook and the sclerotic coat. I can produce abundant proof that the fullest benefit the operation can confer may be easily obtained by this mode of performing it, and that a week or ten days are in general sufficient for recovery, without any subsequent application of scissors or escharotics; and, as before observed, when thus performed, undue prominence of the eye will be a very rare consequence of the operation.

Another unfortunate result, but by no means the fault of the surgeon, is the undue influence which the external rectus occasionally exerts after the eye has been freed internally. For the most part this effect does not continue beyond a few days, and never occurs at all if a slight obliquity remain in the other eye. A very remarkable case of this description presented itself to my friend, Mr. J. N. Thompson, of Nottingham, which I had an opportunity of examining when in that town. A girl of 13 years of age, of an irritable delicate habit, squinted inwards and downwards with the left eye. On dividing the tendon of the adductor, the pupil was instantly everted in an unu-

sual manner, that of the right eye occupying its normal site, and vision became double. It was now found that, on looking at any object placed immediately before her, she had the power of directing the axes of both eyes correctly, so that no obliquity could be detected in either, and vision was single. If, however, without turning her head, she regarded any object placed a little at one side, the eye of that side was instantly turned outwards to a very considerable extent; but when the object was placed on the left side, the globe turned so completely round, that a considerable portion of the cornea was concealed in the outer angle of the orbit, the opposite pupil occupying its proper position. The most singular circumstance in this case is, that the external rectus of the sound eye should obey the same impulse, though in a somewhat less degree, as the eye which had been subjected to operation. But I think the fact is easily explained, and I shall attempt its solution when I have detailed another case that happened in my own practice of a similar nature.

A lady had the operation performed on the left eye, that in which the obliquity was the worst, and the vision most imperfect; the result was in every respect satisfactory. At the expiration of three weeks, as the defect in the right eye continued very marked, she was desirous of having the tendon divided in it likewise, having seen the double operation highly successful in a young person similarly situated a short time previously. The tendon of the right eye was therefore divided; immediately the external rectus of the left eye exerted an undue influence, and turned the pupil so much outwards, that vision became double, and a very unpleasant leer supplanted the original squint. It was afterwards found that she could direct both pupils with the utmost precision, when the object she looked at was placed immediately before her; but that if it were removed only a few inches to either side, if she continued to look at it without turning her head, the external rectus of the eye, on the side to which the object was moved, immediately exerted an undue ascendancy, and drew the pupil so much to the outer angle, that vision instantly became double, and a most ungainly cast to that side supplanted the original evil. This untoward symptom has con-

tinued for some length of time; but as it is now confined to the left eye, and does not appear to be so marked as it was at first, I am in hopes that it will ultimately be overcome when a reparation of the nerves which preserve the sympathy between the eyes is sufficiently established. Still it is possible that, in some instances, this overaction of the abductor may remain a permanent imperfection. This case not only shews the propriety of very maturely weighing the possible consequences of the double operation before having recourse to it, but suggests some points deserving consideration in the mode of performing it.

14, Langham Place, Regent St.
September 10, 1840.

ON THE CURE OF STRABISMUS.

By D. HENRY WALNE, Esq.

[For the Medical Gazette.]

So many surgeons have already communicated to the profession their opinions and experience respecting the new operation for the cure of squinting, that I should be unwilling to add to the number, but that it appears to me very evident that much remains to be learned by those even who have written on the subject.

I could not myself have believed, had not the pages of the medical periodicals proved it, that any surgeon in or out of London would have been at present found ready to declare that in all cases it is necessary, in performing this operation, to employ a sharp hook to draw the eye outwards, especially after the publication of the clear account of Mr. Lucas's simple and effectual, as well as numerous, operations performed without any such contrivance.

Conversation with a surgeon of some eminence, held some weeks ago, had shewn me that a prejudice in favour of force, in preference to address, at that time existed in some minds; but I thought that the superiority of the latter had been since made so evident, not merely by Mr. Lucas's reports, but by those of several other distant and unconnected professional witnesses, that ere this such a prejudice must have been removed. Finding, however, that this is not the case, and that the violent, not to say unsurgical, method of dragging the eye outwards by a sharp hook,

however delicate its construction, is still continued, and that by gentlemen accustomed to operate and witness operations on the eye, I feel that the subject deserves and requires further attention.

When the operation for the cure of strabismus, by division of the muscle causing the disfigurement, was first introduced, it naturally occurred to surgeons, especially those unaccustomed to operations on the eye*, that one principal difficulty would be to keep the eye steady whilst the division of the muscle was effected, and some contrivance for the purpose being deemed necessary, a double hook was suggested and employed by the early operators. But when for the purpose of raising and dividing the muscle itself, after the division of the conjunctiva, a bent probe or blunt hook had been used, it was soon found that, by the same means, the eye was also effectually secured, and its recession from the operator sufficiently prevented, or the effects of such recession speedily corrected. Once this was discovered, the sharp double hook to draw out the eye ceased to be necessary, in the employment of which some address in the fixing it is required, and still more care lest it should tear the sclerotic or the cornea. The same amount of address, and the same opportunity for using it, will suffice to enable a dexterous surgeon to raise gently, either by a hook, or, as I prefer, by forceps not too sharp-pointed, enough of the conjunctiva covering the globe of the eye to allow him to open that loose tunic with scissors or a knife, and divide it to the extent he may think requisite. This being accomplished, there is no difficulty in passing the blunt hook or bent probe beneath the muscle, none of these steps of the operation being in any considerable degree painful. When the hook is beneath the muscle, the operator has complete command of the eye, and with this advantage, over all the fixings by sharp hooks of whatever kind, that it is scarcely possible for him to do any mischief by the means, whereas, with the sharp hooks, he is in constant apprehension that his assistant may do serious injury.

It is not, I think, of much conse-

quence how inconsiderable the opening into the conjunctiva may be, or the direction of it, provided it begins a little below the lower edge of the muscle intended to be divided, if either internal or external rectus, and be capable of readily admitting the end of the blunt hook. If scissors be used for dividing the muscle, the conjunctiva remaining over it will, of course, be liable to be severed at the same moment; if a knife, it is possible to limit more the division of the membrane, and this, it seems to me, constitutes the chief advantage of a knife; but I am by no means satisfied that scissors are not in all cases preferable. When scissors have been employed the surgeon can satisfy himself most fully that every fibre of the muscle, to whose action principally the deformity has been owing, has been cleanly divided, and he can readily remove, if he should wish to do so, the little portion of tendon attached to the sclerotica.

I have not seen any necessity for the artery forceps, employed by some surgeons for the purpose of keeping down the lower eyelid, nor can I fancy any surgeon accustomed to operate on the eye persisting in their use. Nor is there any occasion for a speculum, unless it be in very young children. The fingers or thumbs of an intelligent and practised assistant answer the purpose of separating the lids and keeping them apart sufficiently well. By discarding so much apparatus, at first thought requisite, and only by experience shown to be otherwise, the operation is admirably simplified, and loses, in a great degree, its formidable and painful character. It is reduced to a few simple steps, which, if practised with gentleness and address, leave the patient comfortable, satisfied and surprised at the ease and readiness with which the result he so much desired has been attained. To recount these steps: In the case of inversion, let the patient be seated in a chair, or recline with the head resting on the scroll end of a couch. In the former case the head rests against the breast of the assistant in the first stage, if not in both stages of the operation. The eye not to be operated on must be covered, for on its being so depends the power of the patient to direct outwards the pupil of that which is to be the subject of operation, and so afford to the operator the

* In extraction of the cataract, the most difficult and delicate operation on the eye, the surgeon dare not attempt to fix the ball by any pressure, lest he should squeeze out the vitreous humour. This operation is not, however, admissible in the case of children.

greatest facility of proceeding. If at first this is not done effectually and steadily, a short delay, and perhaps touching the eye once or twice gently, strengthens the patient's resolution. A formidable apparatus, on the contrary, causes alarm, and creates a necessity for its use. When the eye is pretty steadily directed outwards, a pair of forceps, or a fine hook, gently raises a little fold of the conjunctiva, which is penetrated by the very fine point of a pair of scissors, having one of its points as fine as a needle for the purpose, and a section of small extent is made. The eye may now rest, with the lids closed, and the few drops of blood shed by this section be wiped away by the assistant, whilst the surgeon takes the blunt hook and a pair of curved scissors, should he, as I do, prefer them, or if he prefer the scissors already in his hand, it will be well, by turning them, to keep the sharp point away* from the globe of the eye in dividing the muscle, which he proceeds to do as soon as, with the lids again separated, and the use of the blunt hook, he has caught it from below. Having divided the muscle, he carefully examines with the blunt hook, by drawing it over the sclerotic, across the natural direction of the muscular fibres, to ascertain if they are all divided, and being satisfied of this the operation is at an end; but he convinces himself completely by its effect upon the eye. Finding it most convenient myself always to stand on the right or in front of my patient, so as to use my scissors with my right hand, directing their points upwards, which prevents their handles being interfered with by the upper ridge of the orbit, I have my assistant placed on the patient's left, except in the case of outward squint of the left eye, when he stands on the right and I in front. If the left eye be operated on in internal squint, the assistant applies his fingers or thumbs to the lids, towards the external canthus; if the right eye, towards the internal. This is reversed in external squint.

The surgeon will of course select his scissors, as any kind may best suit his manual habits. For dividing the adductor muscle of the left eye, I prefer scissors which are curved in the flat; for that of the right eye such as are

angular, having probe points; but straight will do for either eye, though, I think, less conveniently.

The ground of the preference which I give to forceps over a hook, for raising the conjunctiva, is akin to that which induces every anatomist to prefer them in dissecting loose cellular substance. They are equally ready in catching it up, and, particularly if not too sharp-pointed, more secure of retaining their hold. They are also much less liable to cause the patient to start by the sensation they produce.

We are told strange things as to the necessity of sharp hooks to hold the eyeball in a right direction during the steps of this operation, and those who do not use them have reflections cast upon their experience. What amount of experience would entitle an operator to deem a painful expedient necessary, which even the inexperienced, according to his estimate of the matter, find they can dispense with, I cannot conjecture.

Those operators who still advocate the employment of sharp double hooks for holding the eye, must be divisible into two classes; such as have tried the simpler method, and failed in its execution, and such as have not yet tried it. Let the former publish an account of their attempts, that an opinion may be formed of the cause of their failure; and let the latter make trial of the improved operation. In confirmation of its efficacy and practicability, I will, in the briefest manner, give a few examples, selecting one instance only of each of those varieties of the deformity which are of most frequent occurrence. In all these cases, as well as upon several other occasions, I am indebted to my intelligent friend, Mr. Beale, for his able and judicious assistance.

Single inward squint—left eye.

Mrs. M., æt. 26.—To her own knowledge was affected with squinting before 7 years old. At 13, the sound eye was kept covered, almost constantly, for two years, with great benefit, but she had not further patience. Disease not very strongly marked now, except when aggravated by emotion; but the eye cannot be turned fully outwards. Sight of it very imperfect.

Aug. 24th.—Operation done as above described. Immediate result: the eye could move outwardly to the fullest extent; cure completed in ten

* It is best, however, to use strong scissors, cutting well to a somewhat blunted point, as the fine point above alluded to would be soon destroyed in dividing the muscle.

days, except a little remaining enlargement of the conjunctival vessels, near the wound.

Single internal squint—right eye.

W. N., Esq., æt. 32.—Disease noticed by his friends at the age of about three years. Hearing their remarks, induced him to practise the manner of looking, which, he believes, confirmed it. Deformity strongly marked, and the motion outwardly much limited.

Aug. 23d.—With the head resting on the end of a couch, the patient reclining, on account of being faint with mental feeling, I operated in the above manner. The chief uneasiness he felt was from the restraint on the lids. When it was finished, he would hardly believe that the operation could have been done, and said it had given him no actual pain. Immediate result: total cessation of the strong squint. In this case a slight rounded fungous growth appeared at the corneal edge of the wound. In all other respects success complete.

Double inward squint.

Wm. Goulden, æt. 30.—Disease attributed to convulsions in teething. It is strongly marked in each eye, but he sees very well with either.

Aug. 15th.—Operated on the left eye. Aug. 22d, operated on the right. Direction of the eyes rendered natural in each case. In the former operation, the conjunctiva was more freely divided, and the stump of the tendon carefully stripped off, yet fungous growths appeared at both edges of the wound, shewing that the remnant of tendon is not the cause. The eye last operated on was quite well in ten days. The first, from the occurrence of these growths, requires attention still.

Single external squint—left eye.

Mr. A., æt. 55.—Thirty years ago was twice operated upon for cataract of this eye, the effect of a punctured wound of the eye, but the nerve and other textures having sustained injury, as well as the lens and its capsule, sight remained very much impaired. The squint seems to have been the consequence of this imperfect vision.

Sept. 3d.—With the modification required for dividing the abductor oculi, being little beyond the choice of different positions, for Mr. Beale and myself. Operation as before. Effect: immedi-

ate and complete restoration; case still under treatment, but proceeding very satisfactorily.

Internal squint in a child.

—Brown, æt. 8 years, a rather timid girl. She was placed on a chair, and her father, kneeling before her, asked her to take his hands. By this artifice he took her's, without alarming her. She had the other eye covered, and I proceeded to operate on the left, which she directed outwardly with steadiness. She did not mind the division of the conjunctiva. The blunt hook, in passing beneath the muscle, unfortunately was raised at its point a little too soon, and allowed a few fibres of the muscle to remain undivided, which making it necessary to pass the hook again, some time was lost in prevailing on her to submit. A little patience, however, sufficed, and the operation was then easily completed.

This is the only troublesome case I have had, and shews that the timidity or obstinacy of children might render this gentle operation unavailable in their cases. The result of the operation is, in all respects, such as could be wished, even in this least favourable of the examples which have occurred in my experience.

Guildford Street, Russell Square,
Sept. 1840.

MEDICAL GAZETTE.

Friday, September 18, 1840.

“Licet omnibus, licet etiam mihi, dignitatem Artis Medicæ tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso.”
CICERO.

CONCLUSION OF THE VOLUME.

ANOTHER volume is now terminated, and another medical year is nearly over. So short a time has elapsed since we gave a general summary of our career, that we need not here repeat it*.

We trust that the volumes of the MEDICAL GAZETTE which have since appeared, have not belied our former reputation, nor given cause for the maintainers of professional honour to blush for us. To diffuse useful informa-

* Medical Gazette, vol. xxi. p. 19, art. A Prospect and a Retrospect.

tion, and to raise the tone of professional feeling, have now, as ever, been our aims. Careless of the hostility of the ignorant or the fraudulent, we have rarely turned aside to notice their clamour, but have been content to live it down. Unfounded calumny, says an ingenious writer, is like a fish on dry land; however violent may be its contortions, you need not meddle with it, for it expires of itself.

Amid the turmoil of party disputes and professional controversies, Science continues her quiet victories, and Medicine follows in her path with slow but sure steps. The increased attention paid to hygiene is one of the best signs of the times; nor do medical works alone give evidence of this improvement, but legislators are beginning to consecrate a larger portion of their time to the health of the people. Some months ago, we commented on Mr. Slaney's motion in the House of Commons, for an inquiry into the health of great towns. The Select Committee, appointed at his instance, have made their report, and we trust that we shall soon be able to present its substance to our readers.

Of the prospects of the medical profession, as far as regards its internal economy, it is difficult to speak with probability, much more with certainty. We doubt whether any great change will be effected, and we are quite sure that opinion is very much divided as to what ought to be done. Even if it were within the bounds of improbable possibility, that Messrs. Wakley and Warburton succeeded in adding another to the seventeen licensing bodies, whose number is so often lamented, the reform would be but slight; and it is monstrous to suppose that the legislature would sweep away improved and improving establishments, such as some of our medical corporations undoubtedly are, in favour of some fantastic novelty. Let us enter on the new medical year with better hopes.

ON THE NECESSITY OF STUDYING RARE CASES,

BEING THE INTRODUCTORY LECTURE TO A
COURSE OF PHYSIOLOGY, BY M. LORDAT.*

WHEN the old University of Paris was suppressed, and the republican government substituted the *Ecole de Santé* for the *Faculté de Médecine*, the director, besides his official duties, was appointed to explain the doctrines of Hippocrates, and the history of rare cases; that is to say, the history of the extraordinary phenomena which have been observed at various periods in some individuals, whether belonging to anatomy or physiology. It appears, however, that he did not give a single lecture on the latter subject; and in the catalogue of professors in the Parisian faculty of medicine, we no longer find one whose office it is to explain rare cases. I am surprised that this part of the study of physic should have fallen into oblivion, indifference, or discredit.

On examining the question more nearly, however, it seems to me that all parts of the history of rare cases are not equally neglected; cases belonging to anatomy are studied, but those appertaining to physiology are passed over. Monstrosities, anomalies in the distribution of the blood-vessels, club-feet, imperforations, and remarkable pathological phenomena belonging to surgery, are carefully collected. If they are not the subject of a special lectureship, they do not lack celebrity; they re-echo in the Academies; they are described at length and commented on in the journals; and they have been long mentioned in lectures on surgery and anatomy, with which they have more or less connection. But it is not so with the singularities observed in the exercise of the vital force of man, without material alteration. The facts formerly taught in the schools, and published under the names of *casus rariores*, *historia medica admiranda*, or *praxis miranda*, are now unknown; and those which are still presented to us by nature are unnoted, disdained, and rejected with derision.

Why are two kinds of facts, which are equally singular, treated so differently? We see, on reflection, that they are derived from the same source; that congenital deformities or monstrosities are the effects of the same cause which produces the most singular transitory phenomena, namely, the variations which happen in human *dynamism*. How is it possible to think so

* Abridged from the *Gazette Médicale* of July 18, 1840.

much of one kind, and so entirely to undervalue the other?

The immediate or proximate cause of this general disposition is to be found in the preference given by the majority to material knowledge over intellectual notions. The presence of a permanent fact which strikes the senses absorbs the whole attention: its origin and cause are forgotten, while the observer is occupied in classing it, or employing it for some mechanical purpose. But a vital, fugitive, and extraordinary phenomenon is often noted by the skilful alone; it vanishes before a sufficient number of witnesses have been able to satisfy themselves of its reality, and make it sufficiently notorious. Since nothing visible remains of it, we can only investigate its relations, affinities, and causes; an intellectual labour which is very difficult, and is no longer the mode of the day.

The disregard of this study proceeds from the prevailing error of neglecting the theory of physic, and believing that the causes which we have seen are sufficient to form a complete nosology. The majority of physicians have forgotten the necessary truth, that the number of things which the most busy practitioner has seen is infinitely smaller than the number of those which he has not seen. From this forgetfulness proceed the disuse of many doctrinal principles of a high order, the ignorance of many vital facts necessary to be known, contempt for the past in medicine, profound indifference for anthropologic erudition, a great desire to appear well informed in rare cases of the anatomical kind, and an extreme wish to show oneself an *esprit fort* (incredulous) with respect to these singular phenomena in the domain of physiology, which we have not witnessed ourselves. Nay more, we now actually see men, otherwise estimable, who after applying the test of their senses, quite at their ease, to physiological phenomena differing from those with which they are familiar, seriously repeat what Fontenelle uttered as an epigram: "*Je l'ai vu, et je ne le crois pas.*"

This last caprice, which has been seen sporadically in all ages, from the effect of individual ignorance, and which has now become epidemic, from the fault in teaching which I have mentioned, might be injurious to your progress if you were affected by it.

You do not suppose, I hope, that I declare myself the general champion of all the writers of wonders, of all the historians who have accumulated marvellous narratives, such as Herodotus, Pliny, and Livy. What I wish is that you should distinguish judicious and observing physicians from other narrators; that you should not be

armed with prejudices against extraordinary facts, either when it depends on you to verify them, or when you are able to calculate on their credibility, whether from their relations to the knowledge you have of human nature, or from the rules of evidence.

I have endeavoured to find out what are the accusations by which the enemies of rare or new cases deery their study; but I have listened in vain, and have heard nothing but repugnance, obstinate and unreasoning incredulity, and indirect arguments; but never what the logicians call an argument *ad judicium*.

The following is what the incredulous allege:—

1. That novel cases of the physiological kind are unworthy of confidence, and consequently do not deserve any attention.

2. That rare cases, in general, are useless in the practice of physic, for it is an axiom that *rara non sunt artis*.

3. That they have been collected to entertain, and not to instruct; they are æsthetic and not philosophical.

4. The physician cannot employ them, as the public does not believe them, and even laughs at them.

1. *Novel cases of a physiological kind are unworthy of attention.*

When I wished to analyse this important assertion, and reduce it to clearer terms, some of these cases were declared to be impossible, others incontrovertibly uncertain, and others anomalies.

But when I asked for a demonstration *à priori* of the impossibility of the most extraordinary cases, I did not find a man capable of giving it. Those who consider the rare cases narrated in the writings of physicians as absurdities, are excellent *savans*, naturalists, or mathematicians; but they are unversed in the knowledge of human dynamism, and, consequently, unable to conceive the extent and limits of this power; so that they employ the word absurdity without reflecting on its meaning, and with the exaggeration of our men of fashion and pretty women.

Do not misuse this term, or confound the impossible with the incredible. The impossible is an absolute and demonstrable thing. The incredible depends on a relative mental disposition, which differs in each individual, according to the quality and number of the ideas which he possesses concerning the thing in question. This disposition is not composed merely of the distance which separates the fact examined from the knowledge with which the mind is furnished, but it also depends on the probability of the testimony by which the fact is accompanied.

PRACTICAL OBSERVATIONS
ON
PECULIAR AFFECTIONS OF THE
THROAT,

ARISING FROM ABSCESS BETWEEN THE
PHARYNX AND SPINE, AND OCCURRING IN
CHILDREN AND ADULTS ;

Exemplified by Cases.

By CHRISTOPHER FLEMING, M.D.,

Member of the Royal College of Surgeons, Ire-
land ; Member of the Court of Assistants ;
Lecturer on Surgery, &c. &c.

[Concluded from p. 969]

LET us now inquire into those circumstances which will best explain the nature of the affection, its progress, and the treatment calculated to remedy it.

From the report of the cases, and the details of the attendant symptoms (given perhaps with unnecessary minuteness), a particular description of this affection may in a great measure be dispensed with. It is evidently one of an inflammatory character, and, like the majority of such, may be acute or chronic, circumscribed or diffused, as appears from the following extract from the "Elements of the Practice of Medicine," by Drs. Bright and Addison: "Acute idiopathic pharyngitis, or that in which the inflammation is limited to the pharynx, is of extremely rare occurrence. We have only seen two instances of the kind. One occurred in a female beyond the middle period of life, the other in a man between forty and fifty years of age. The female, after exposure to cold, was attacked with pain in the throat, and great pain and difficulty in swallowing, speedily followed by the ordinary signs of febrile excitement. The pain and difficulty in swallowing rapidly increased, till at length the smallest particle of food or drink could not be taken. *The voice was distinct, but the articulation imperfect, as if the patient were unable or unwilling to exert the laryngeal muscles.* On making a careful inspection, scarcely the slightest trace of inflammation could be detected in the throat, nor could the epiglottis be distinguished; but on making pressure on one spot externally on the right side, and at the posterior part of the thyroid cartilage, the patient complained of acute pain. She was bled from the arm, and had leeches applied to the neck, followed by a large warm poultice, and the inhalation of warm water vapour. Under such treatment the disease yielded in a few days to such an extent that she was again able to swallow; but acute pleurisy now supervened, which, in her reduced state and bad constitution, speedily proved fatal. On examining the parts

after death, unequivocal marks of acute inflammation were found at the lower part of the pharynx, the inferior portion of the epiglottis, and posterior surface of the arytenoid cartilages, together with such a degree of purulent infiltration into the submucous cellular tissue in the latter situation, as almost to present the appearance of an abscess, although the cellular structure itself was not broken down. Had not the disease been subdued, this might have undoubtedly passed into a state of abscess, which, by its increase of size and consequent pressure upon the larynx, would probably have seriously interfered with the process of respiration, or even have proved fatal by producing suffocation. The symptoms of the other case bore an exact resemblance to the above, with the exception of the pain on making pressure externally, which was not present in that instance."

Here are evidently recognizable the local phenomena of diffuse inflammation, confirmed by the transfer of disease to the thoracic organs, so frequent in similar cases.

For my own part, I am disposed to the opinion, that, with very few exceptions, this particular affection of the throat is always symptomatic, in some cases, of direct injury, as in that cited from Sir Astley Cooper's Lectures; but, in by far the greater majority of cases, symptomatic of some constitutional derangement, general or specific; general, as the result of fever, and particularly of that form of fever termed by the French pathologists "gastro-encéphalite," or specific, in the two-fold sense in which that term is applied by practical authors, namely, specific as to the exciting cause, or specific as to modification by constitutional peculiarity.

These considerations appear to me of great importance in influencing the character and progress of the attack; in the one, stamping it with an acuteness and rapidity of supervention alarmingly deceptive, and in the other, with a chronic tediousness not likely to escape detection.

Its seat is unquestionably between the back of the pharynx and the muscles on the anterior part of the spine, in the loose cellular, or rather reticular texture, there to be found intervening. It is nothing more or less than inflammation in this region, terminating in suppuration; and, to have an accurate knowledge of the pathological conditions present, as well as of the symptoms attendant on them, and the requisite treatment, it is absolutely necessary to bear in recollection both the structural and relative anatomy of the pharynx. Perhaps in few other lesions can we more satisfactorily exemplify the relations be-

tween cause and effect. For example, the extreme tension, and almost unyielding hardness of those tumors on pressure, stated in the report of the cases, will be accounted for by the very strong, though apparently diaphanous membrane, upon which its superior constrictor is expanded at its posterior and upper part; and the locked state of the jaws will be partially accounted for, at all events, by the attachment of a portion of that muscle in its lateral aspect. The facility of opening the mouth in some cases, and the impossibility in others, may be referrible either to the amount of matter collected, and hence greater tension, or perhaps to the formation of the lower jaw in the child, as it was in the youngest that this freedom of separation existed most. Again, the cerebral symptoms, and those affecting the respiratory organs, are easily attributable to the mechanical pressure on the nerves and important vessels, on the one hand, and to the presence of impure blood in the nervous centre, on the other; while the peculiar position of the head, the inability to elevate it, the rigid state of the muscles at the back of the neck, and the supervention of the almost apoplectic interval when in the recumbent posture, may be referred to the varying pressure exercised on the glottis from the projection of the abscess opposite that opening, necessarily influencing more or less the free entrance of air to the lungs.

In childhood these effects on the brain are of the greatest moment; all practitioners are aware of the great predisposition which exists at that period of life to cerebral disease; that it is induced by the most trifling, sometimes the most opposite, causes, and that none more frequently give rise to it than those which create any derangement in the circulating capillary system, already so necessarily active in the immediate vicinity of this organ; that the several cutaneous diseases incidental to this period of life often terminate fatally in it, or are complicated with it, and none perhaps more than those which are accompanied with affections of the throat; for instance, variola or scarlatina. How awfully fatal are not those diseases in childhood; and in the most alarming cases, is not the throat seriously engaged? Nay more, may it not be one of the causes of the cerebral affection? These considerations have led me to an opinion which I am strongly induced to entertain, from reflections both anatomical and practical; namely, that the more close investigation of the causes and symptoms of this affection in its *acute* form may tend to limit the fatal results of those diseases, inasmuch as in them we know it to be a fact, that the glands in the neighbourhood

of the throat are constantly and extensively implicated in its inflammatory affections; and that if, as I at present feel satisfied from the examinations I have made, some of those glands are to be found in the loose reticular texture between the pharynx and the spine, more frequently in the earlier than the advanced periods of life, we have an additional point, at all events, to direct our attention and treatment to, which may assist materially the operation of remedies. That this affection which I bring under the consideration of the profession is not unfrequently an acute inflammation of one of those glands, particularly in childhood, I am strongly disposed to think, and I am confirmed in the opinion even by the history of the very cases which I have adduced. That those glands are only occasionally found in this situation I admit, and hence probably the rare occurrence of this particular form of disease; but that they do exist more frequently than is generally imagined I am equally certain; and I also believe that those affections of the throat termed *scrofulous*, when engaging the back of the pharynx, and presenting deep ulcerations, are often no more than chronic suppuration and ulceration of them.

To sum up then I would say, that I consider this affection of the throat in children, when *acute* in its progress, as, often, an inflammation of a lymphatic gland situated at the back of the pharynx; an inflammation extremely rapid in its progress to suppuration from its particular position; that I would watch for it during the period of difficult dentition, and in the several cutaneous affections or diseases of the gastro-intestinal mucous membrane to which children are liable; and that I would consider as strongly pathognomic of its presence the following symptoms:—

Fever, more or less *sthenic* in its character, according to the peculiarity of constitution of the child, is always present, and, I think, precedes the development of the local symptoms.

These local symptoms are premonitory and essential.

The *premonitory*, indicative of local uneasiness, but yet common to all affections of the throat; complained of, or otherwise, according to the age of the child, and on examination not accompanied with proportionate visible lesion. The *essential*, often very suddenly supervening, and indicated by derangement of the cerebral, circulating, and respiratory systems, alternating with the comparatively healthy condition of those systems, according to the alteration in the position of the individual. Fixed and retracted state of the head, with rigidity of the muscles at the back of the neck, and more or less locked state of the jaws. Painful deglutition,

impossibility of swallowing solids, and fluids convulsively darted forward through the mouth and nose.—Repeated acts of deglutition without the presence of any fluid in the mouth, and on examination of the fauces, a firm, projecting tumor felt beyond the base of the tongue, and if seen, presenting a smooth, rounded, highly vascular appearance behind the soft palate, usually occupying the median line, but occasionally inclining to either side. These essential symptoms accompanied with the ordinary characteristics of suppurative fever.

The presence of those symptoms appears to me so conclusive of a collection of matter at the back of the pharynx, that I would not for a moment hesitate to decide on its nature, and proceed to open it. In such cases I think the interference of the surgeon absolutely necessary, not alone from the fact of certain fatal results from mechanical pressure on, and interference with, vital organs, but also from the situation of the abscess being particularly favourable to extensive diffusion. In opening it, great caution must be observed, and a careful assistant be at hand to steady the head, and throw it forward the moment the abscess is punctured.

I am disposed to recommend an instrument much on the construction I have alluded to. I think it a manageable instrument, and fully within control, and I think the triangular wound made with it less likely to heal by adhesion, than one made with a lancet or bistoury. Another advantage also arises from the valvular shape of the opening, whereby a too copious or sudden discharge of matter is prevented, and a greater or less extent of subsequent ulceration secured, by which the opening becomes gradually proportioned to the contracting walls of the cavity, and hence is placed in a position more favourable to permanent healing.

The necessity for caution will be proportioned to the situation of the abscess, being more called for where it deviates from the median line, or exists below the level of the tongue. I have seen one instance, referrible, I think, to this class of disease, in which a spontaneous opening took place, and here the situation of the abscess was very high up, and the discharge was principally through the nose.

It occurred in a boy not more than *four weeks* old, who had a well-marked attack of erysipelas of the face and scalp, ushered in by a severe fit of convulsions. He was under the care of my friend Dr. Fitzpatrick, with whom I was in attendance. Independent of the age of the child, the case was most unpromising, from his extreme delicacy of constitution. Every, the most

unfavourable symptoms, were present. In fact, we thought the child almost in *articulo mortis*,—when a *sudden and profuse* purulent discharge took place from the nostrils. The features of the case rapidly altered, and the child got well. At that time I was unacquainted with the form of disease in question; but I think it more than probable, that it was one of those critical depôts behind the pharynx; at all events the case is, worth recording, from the occurrence of erysipelas in the situation mentioned, at that very early period of life, and from its successful issue.

It is unnecessary to dwell on the diagnosis of this affection of the throat, or allude to those diseases, with which it may be confounded, their respective descriptions being so extremely accurate, as merely to require reference to the authors who treat on them. Unquestionably, in the advanced stage of it, where the tumor is considerable, and the symptoms of cerebral compression intense, particularly where much debility and emaciation are present, (not unlikely concomitants,) it is more than probable that it may be overlooked, and the fatal result attributed to other causes,—and in the earlier stage many symptoms exist not unlike those attendant on spinal disease in this portion of the cervical region. Attention, however, to the history of the case, to the presence of fever, and to those features which have been noted as *essential*, will at once remove any difficulty.

Chronic abscesses, single or otherwise, are also occasionally found in this situation during the earlier periods of life. They are often actually formed of some size before detected, and this, probably, from the little inconvenience they occasion. They are connected more or less with that state of constitution termed scrofulous, and I am satisfied they will be found of the same nature with similiar degenerations (if I may use the expression) of the cervical glands, so common in those constitutions.

The symptoms attendant upon them are in a much milder degree of the same character with the acute, and perhaps, the most prominent are, the remarkable effect produced on the respiration by change to the recumbent posture. There is absence of fever, and throughout the day the child is free from any obvious illness,—able to play, and join in the amusements of other children; I have known them not to complain of any uneasiness in the throat, and attention to be directed to it, from the raucous breathing during sleep. In fact, the symptoms much resemble those of common scrofulous induration of the tonsil. They are hence cases of comparatively minor importance; there is time to investigate them. Indeed, with them may be compli-

cated chronic enlargement of the tonsils. I have met with them after scarlatina, after variola, and after measles. In fact, they are some of the sequelæ of those cutaneous diseases, and like them may be accompanied with suppuration of the internal or external ear, and so come under the description of similiar cases already alluded to, as described by Petit. They possibly may require surgical interference, and always are benefited by those local and general remedies suited to their peculiar nature. At the same time, it is perfectly intelligible that they may undergo a spontaneous cure, and altogether escape observation.

The remarks which I have as yet made are principally in reference to this affection, as an occurrence in childhood. From them the following conclusions are, I think, justly deducible.

First,—That a new cause of obstruction in the throats of children exists independent of those noted by authors who treat on their respective diseases.

Secondly,—That the presence of the obstruction is indicated by symptoms peculiarly characteristic, although extremely equivocal in their nature, if not accurately investigated. And

Thirdly,—That its removal is effected by an operation, simple in performance, and, as far as can at present be ascertained, certain in its results.

With respect to this affection in *adults* I have already stated that I have not had an opportunity of witnessing an instance. I cannot, however, imagine otherwise, than that the attendant symptoms, in the incipient and advanced stages of the inflammation, must very much resemble those as detailed in the child, with the great additional advantage of the history from the patient, and yet, how extremely anomalous and deceptive must they not be, when we reflect on the cases which I have brought forward and reported. In all, the *premonitory* symptoms did not attract attention, and even in those which were recognized, and terminated favourably, the *essential* were too characteristic, from the extreme development and mechanical operation, to escape notice. That they occur, however, cannot be questioned, and that they are, with certain restrictions, attributable to similar causes, is more than probable.

The case I have alluded to in the "Dictionnaire de Chirurgie, &c." is conclusive as to the occasional supervention of abscess behind the pharynx during or after fever, in the *adult*, just as the first case I have detailed, is, in the *child*.

"Il est assez rare que l'on soit obligé de porter l'instrument tranchant dans le pharynx, soit afin de donner issue à des collections purulentes formées à son voi-

sinage, ou dans son épaisseur, soit pour dégager et extraire des corps étrangers arrêtées dans sa cavité. J'ai vu, cependant, il y a peu d'années, un malade qui, à la suite d'une gastro-encéphalite grave, avait eu un *abcès critique volumineux* à la partie postérieure du pharynx. La bouche étant largement ouverte, et la langue abaissée avec le doigt, ou le manche d'une cuiller, la tumeur se présentait rouge, tendue, luisante et lisse à sa surface, faisant dans le pharynx une saillie considérable, qui obstruait cette cavité, rendait la respiration difficile, s'opposait au libre passage des substances alimentaires, et alterait beaucoup l'articulation des sons. La tumeur s'étant développée dans la paroi cervicale du pharynx, directement en arrière de l'isthme guttural, l'incision qui en fut pratiquée donna issue à une grande quantité de pus, que le malade rejeta au moyen d'efforts d'expulsion peu considérables, et la guérison eut lieu en peu de jours."

In this case and that given by Sir Astley Cooper, it is remarkable with what facility the mouth was opened, and the tongue depressed, as it forms a strong contrast with the almost utter impossibility of accomplishing the one, and the excessive pain induced on attempting the other, in those cases I have met with. It may perhaps be attributable to the greater powers of accommodation of the structures engaged, to their new position, at the former period of life than in the latter; but I am inclined to refer it more to the very rapid progress of the acute form of the disease in children, and the accompanying fever, a circumstance not noted in the other cases. They are, in fact, more of a chronic character. Indeed no account is given of the constitutional symptoms, or whether any existed; and it is almost certain that such would not have escaped the accurate research of those who witnessed and reported them, did they present any peculiarity beyond that arising from their local effects. Hence an additional circumstance in favour of their *chronic* nature.

It would certainly be a most interesting fact to be enabled to adduce an instance of the occurrence of such an affection, *acute* in its progress in the adult. Possibly some of the suddenly fatal cases in tonsillitis are confounded with them.

Allan Burns, in his "Surgical Anatomy of the Head and Neck," thus expresses himself when on the subject of suppuration in the tonsil.*

"When the collection of matter is large before the abscess bursts, the patient is in a more dangerous situation than is generally

* Surgical Anatomy of the Head and Neck, by Allan Burns. Glasgow Edition, 1824.

imagined. His breathing is obstructed and gasping; he feels much anxiety in the chest; his face is dark and bloated; his eyes are painted with vessels containing purple coloured blood, they are prominent, and seem ready to start from their sockets. We cannot be deceived in regard to the origin of those symptoms, which decidedly show that the lungs are imperfectly supplied with impure air. Whenever the abscess bursts, the mouth and fauces are filled by a gush of matter, every obstruction to the free entrance of air is suddenly removed, the patient fetches an involuntary and deep inspiration, air and matter rush together into the trachea, and death from suffocation is almost the inevitable consequence.

"This, to some, may have the appearance of a fanciful description, or, at all events, an overcharged picture; but its fidelity will be admitted, when I inform them, that in this very way a strong, active young man lately lost his life. He had been complaining for a few days of a sore throat, for which he had consulted his surgeon, who had employed the usual remedies. The inflammation terminated in suppuration: the abscess enlarged until the tumor occupied the entire fauces; yet *ten minutes before his death*, he was walking about the house, restless indeed, anxious, and gasping for breath. The bursting of the abscess, and death, followed each other so rapidly, that no measures could be taken to prevent the latter event.

"The cause of death was not conjectured in this instance: the body was examined, and the trachea found deluged with purulent matter."

It is much to be regretted that the condition of the larynx is not particularly noted, as the history of the case is by no means conclusive of the actual nature of the affection of the throat; it merely states, "sore throat"—a very equivocal expression.

Is it not a fact, that in the most severe cases of acute cynanche tonsillaris, the inflammation occupies a greater or less portion of the soft palate and its pillars? That the tongue can be hardly protruded, and that the jaws are separated with difficulty; and in this condition is not the base of the tongue so circumstanced as rather to favour the protection of the glottis; an office in which it is not unlikely assisted by the effusion of serum, or lymph mixed with serum, to a greater or less amount, on the anterior aspect of the base of the epiglottis? Here is it likely that an abscess of the tonsil would burst into the trachea? or rather that the glottis would admit the matter? I think not. I think in such severe cases death is much more attributable to the surrounding serous effusion producing œdema of the glottis, and its consequences;

or to the extension of a bad character of inflammation producing a similar effect on the glottis, from sub-mucous purulent infiltration.

It may be said that among the symptoms I have enumerated as pathognomonic of abscess behind the pharynx, the peculiar state of the jaws now noted, existed, and that it equally favours the same position of the tongue, and the same condition of the glottis; but here it must be borne in recollection that the situation of the abscess (when of a *phlegmonous* character, perfectly *circumscribed*) would above all others oppose this effect of the epiglottis. It acts from *behind forwards*, and so far forms an obstacle to otherwise perhaps fatal results, an obstacle assisted within certain limits by the posture selected by the patient. But on the other hand, how is this effect circumstanced as far as regards the glottis, should this abscess give way? or should the surgeon be incautious in opening it? Surely the passage of the matter into the trachea is almost inevitable. May such results not have occurred without detection? may it not have been the case here? The only provision against such a termination is the extreme laxity of connexion between the spine and the posterior part of the pharynx favouring its descent, and the more dense nature of the aponeurotic expansion already alluded to in the *median line*, being unfavourable to its pointing in that situation.

When we recollect, however, the laws adopted by nature to direct the progress of abscesses situated near mucous membranes, and that those laws are more strictly adhered to, the more *acute* the nature of the abscess, and the more distant from a *cutaneous* surface, we can reconcile to ourselves the opinion that such provisions would not prevent the *direct* bursting of the abscess, notwithstanding their presence. The same remarks are not applicable to *chronic* abscess; and hence the extended route they take may be accounted for, as instanced in two cases reported in the Transactions of the Association of the College of Physicians, on abscesses between the *œsophagus* and *spine*, which at their commencement were most probably situated behind the upper part of the pharynx, and there recognizable by sight or touch.

In the adult then as in the child the acute abscess behind the pharynx imperatively calls for the early and prompt interference of the surgeon, who must necessarily observe the same caution already alluded to in reference to its treatment. The selection of the trochar is perhaps still more advisable, from the great probability of a considerable accumulation of matter. The constitutional treatment here, as in that of

the child, includes, of course, those restorative means generally adopted under similar circumstances.

Chronic abscess in this situation is, in the adult, I would say, always symptomatic of some constitutional derangement resulting from a specific taint.

It may be scrofulous, and decidedly it may be connected with those anomalous affections occurring in the progress of cases of a pseudo-syphilitic character. As, in such affections elsewhere, our principal aid must be derived from constitutional treatment, which it is unnecessary here to particularize. The local treatment may vary in each individual case as to time of interference, but in all I believe the slow evacuation of the contents of the abscess is prudent. The complication of an abscess in this region of the spine with disease of any of the cervical vertebrae, will of course materially modify its character and progress, but not having met with such I merely allude to their possibility of occurrence.

The diagnosis of this affection in the adult is to a certain extent unattended with much of difficulty, and principally, perhaps, as in the child, escapes detection, from the little local distress induced by its presence. Some caution, however, is called for notwithstanding, as in the situation in which it occurs other affections of a chronic character are met with, with which it may be confounded. Allan Burns, for example, mentions a case where a *polypus* was mistaken for an abscess of the tonsil. Is it not equally probable, that a similar mistake may be made in the case of chronic abscess behind the pharynx; or, might not a chronic tumor, malignant or otherwise, in the same situation, lead to a similar mistake? These considerations, however, are not exactly relevant, or if so, are unnecessary, as they imply more than unusual carelessness on the part of the practitioner.

Enough, then, has been advanced, confirmatory of the presence of this form of disease in children, and in adults, and explanatory of those most prominent symptoms attendant upon its progress and full development. It most certainly is to be met with at *both epochs* of childhood, as an *acute and chronic* affection, and more than probably is similarly so in adult life. In both it requires on the part of the surgeon, promptness and extreme accuracy of diagnosis, and in both the most circumspect caution and decision as to treatment. Attributable to causes already specified as generally applicable, the chronic form in the adult may be complicated with constitutional lesions somewhat peculiar, arising from diseases to which he is more liable.

QUERY REGARDING SQUINT-CURING.

To the Editor of the Medical Gazette.

SIR,

I SHALL feel obliged to any of the readers of the MEDICAL GAZETTE, who have had opportunities of judging of the ultimate effects of the operation of dividing the rectus internus in cases of strabismus convergens, if they would state the result of their observations.

The story with which we were at first entertained, that instantly on dividing the muscle the eye flew like lightning towards the temporal side of the orbit, seems to be dropped. The eye comes soberly now, and sometimes not for a day or two, into the central position. It keeps there, sure enough, so long as the wound near the inner canthus is open, and the conjunctiva swollen; but as the swelling falls, and the pain subsides, does not the squint begin again to appear? and by the end of six weeks or two months, is it not generally found to be the case that the squint has not been cured, but is nearly, if not quite, as bad as ever?—I am, sir,

Your obedient servant.

SOLOMON SINGLE-EYE.

September 9, 1840.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

Thursday, Sept 10, 1840.

John Hill.—J. T. Porter. Sheffield, Yorkshire.
—O. L. Donnell, Falmouth, Cornwall.

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, Latitude 51° 37' 32" N.
Longitude 0° 3' 51" W. of Greenwich.

Sept.	Thermometer	Barometer
Wednesday 9	from 52 to 71	29.97 to 29.91
Thursday . 10	56 65	29.89 29.94
Friday . . 11	48 63	29.90 29.94
Saturday . 12	40 63	29.92 29.90
Sunday . . 13	35 61	29.81 29.68
Monday . . 14	37 55	29.47 29.23
Tuesday . . 15	44 53	29.27 28.97

Prevailing wind, S.W.

On the 9th, generally cloudy. The 10th, morning cloudy, with rain, otherwise clear. The 11th and two following days generally clear. The 14th a general overcast, small rain falling all the afternoon and evening. The 15th generally clear, till about 10 P.M., when it began to rain, and continued till after midnight.

Rain fallen, .38 of an inch.

CHARLES HENRY ADAMS.

A TABLE OF MORTALITY FOR THE METROPOLIS,

991

Showing the Number of Deaths from all Causes, registered in the Four Weeks ending Sept. 5, 1840.

Causes of Death.	Aug.—Sept. 1840.				Weekly Average, 1838.	Causes of Death.	Aug.—Sept. 1840.				Weekly Average, 1838.			
	Aug. 9—15th.	16th—22d.	23d—29th.	30—Sept. 5th.			Aug. 9—15th.	16th—22d.	23d—29th.	30—Sept. 5th.				
Small-Pox.....	20	12	25	23	73	Nephritis.....	1	..	1	2	.5			
Measles.....	18	28	21	21	11	Diabetes.....	..	..	..	..	.4
Scarlatina.....	37	44	35	48	29	Stone.....	1	..	1	..	.4			
Hooping Cough.....	16	16	8	16	40	Stricture.....	1	..	1	..	.6			
Croup.....	10	6	6	6	7	Dis. of Kidneys, &c.,..	4	4	4	1	3			
Thrush.....	15	15	20	12	6	Total.....	7	4	7	3	5			
Diarrhœa.....	31	20	22	20	8	Childbed.....	9	5	2	3	8			
Dysentery.....	2	4	3	3	2	Ovarian Dropsy.....	..	2	..	..	.3
Cholera.....	6	6	1	6	.3	Dis. of Uterus, &c. ..	3	2	1	1	2			
Influenza.....	1	1	1	..	1	Total.....	12	9	3	4	10			
Typhus.....	26	27	23	35	78	Rheumatism.....	..	2	2	1	4			
Erysipelas.....	3	3	1	8	8	Dis. of Joints, &c. ...	3	5	4	3	4			
Syphilis.....	..	3	..	1	1	Total.....	3	7	6	4	8			
Hydrophobia.....	..	..	..	..	.2	Ulcer.....	..	2	..	..	.4
Total.....	185	185	166	199	265	Fistula.....	..	..	1	1	.4	
Cephalitis.....	9	17	22	12	10	Dis. of Skin, &c.	1	..	..	..	.4
Hydrocephalus.....	37	36	36	41	34	Total.....	1	2	1	1	1			
Apoplexy.....	20	17	11	18	19	Inflammation.....	4	3	6	2	18			
Paralysis.....	10	10	19	13	14	Hæmorrhage.....	2	1	3	1	4			
Convulsions.....	66	68	81	58	67	Dropsy.....	35	35	28	26	34			
Epilepsy.....	3	..	4	..	4	Abscess.....	6	3	4	4	4			
Insanity.....	..	..	..	..	1	Mortification.....	6	2	3	4	4
Delirium Tremens....	4	1	1	1	1	Scrofula.....	1	..	4	3	1			
Dis. of Brain, &c.....	11	8	7	8	6	Carcinoma.....	8	8	13	9	6			
Total.....	160	157	181	151	156	Tumor.....	1	1	2	1	1			
Quinsey.....	2	4	..	1	2	Gout.....	2	..	..	1	1	
Bronchitis.....	5	7	7	1	8	Atrophy.....	7	5	7	11	4			
Pleurisy.....	..	..	1	3	2	Debility.....	27	18	20	19	12	
Pneumonia.....	43	39	32	44	71	Malformations.....	2	..	1	..	1			
Hydrothorax.....	..	1	7	5	6	Sudden Deaths.....	11	28	6	12	12			
Asthma.....	10	8	4	12	28	Total.....	112	104	97	93	102			
Consumption.....	146	142	131	128	146	Old Age, or Natural } Decay.....	56	44	46	49	79			
Dis. of Lungs, &c.....	10	11	8	12	10	Intemperance.....	..	2	..	..	.4
Total.....	216	212	190	206	275	Privation.....	..	2	..	..	.6
Pericarditis.....	1	1	1	..	.3	Violent Deaths.....	25	22	20	34	25			
Aneurism.....	..	2	1	..	.5	Total.....	25	26	20	34	26			
Dis. of Heart, &c.....	18	9	10	14	15	Causes not specified..	1	6	1	3	13			
Total.....	19	12	12	14	16	Deaths from all Causes	875	831	820	857	1013			
Teething.....	25	24	24	27	15	AGES.								
Gastritis—Enteritis..	47	39	25	40	17	Aug.—Sept.	0—15	15—60	60 & upwards.					
Peritonitis.....	2	2	3	2	1	Aug. 9—15th	507	235	144					
Tabes Mesenterica...	9	5	5	9	3	16th—22d....	474	265	136					
Ascites.....	2	..	..	1	.4	23d—29th....	457	234	128			
Ulceration.....	..	2	6	1	1	30—Sept. 5th	447	258	151					
Hernia.....	1	..	1	1	2	Weekly } Average, 1838 }	466	352	192					
Colic or Ileus.....	3	1	3	2	4									
Dis. of Stomach, &c...	11	11	6	7	4									
Hepatitis.....	1	1	..	1	1									
Jaundice.....	3	2	2	1	2									
Dis. of Liver, &c.	11	5	14	4	7									
Total.....	115	92	90	96	57									
Estimated Population, 1840.						Aug. 9th—15th.					16th—22d.	23d—29th.	30—Sept. 5th.	Weekly Average, 1838.
West Districts, 308,920						129					137	122	126	156
North Districts, 414,458						172					176	148	163	172
Central Districts, 369,722						170					149	157	160	208
East Districts, 411,635						189					191	190	194	239
South Districts, 450,265						228					222	203	214	194
1,953,000						824					831	840	867	1013

OF

DRUGS ON SALE IN THE ENGLISH MARKET,

With their Prices and several Duties.

(From the Official Returns, Sept. 8, 1840.)

	PRICE.				DUTY.	DUTY PAID.			
	£	s.	d.	£		s.	d.	In 1839 to last week.	Same time last year.
Aloes, Barbadoes, D.P. c	15	0	0	to 30	0	0	} B.P.lb 0 2 } F. lb 0 8 }	78,821	92,367
Hepatic (dry) BD. c	5	0	0	10	0	0			
Cape, BD. c	1	15	0	3	10	0			
Anise, Oil of, German, D.P. lb									
E. I. lb	0	5	0	0	5	6			
Asafoetida, B.D. c	1	10	0	3	10	0			
Balsam, Canada, D.P. lb	0	1	0	0	1	1			
Copaiba, BD. lb	0	1	8						
Peru, BD. lb	0	4	6						
Benzoin (best) BD. c	25	0	0	50	0	0			
Camphor, unrefined, BD. c	11	0	0						
Cantharides, D.P. lb	6	3	6						
Caraway, Oil of, D.P. lb	0	9	0						
Cascarilla or Eleutheria Bark, D.P.C. lb	3	10	0						
Cassia, Oil of, BD. lb	0	9	6						
Castor Oil, East India, BD. lb	0	0	4	0	0	10			
West I. (bottle) D.P. 1½ lb									
Castoreum, American lb	0	17	0	0	18	0	} lb 0 6	493	471
D.P. Hudson's Bay lb	0	18	0	1	0	0			
Russian lb				none					
Catechu, BD. Pale c	1	1	0				} c 1 0	39,069	30,950
Dark c	1	6	0						
Cinchona Bark, Pale (Crown) lb	0	2	0	0	3	6				} lb 0 1	31,245	31,792
BD. Red lb	0	2	0	0	4	0			
Yellow lb	0	4	0	0	4	4			
Colocynth, Turkey lb	0	1	6	0	2	9	} lb 0 2	6,549	7,749
D.P. Mogadore lb	0	1	0						
Calumba Root, BD. c	0	12	0	1	15	0			
Cubebs, BD. c	3	0	0	3	10	0			
Gamboge, BD. c	5	0	0	15	0	0			
Gentian, D.P. c	1	10	0						
Guaiacum, D.P. lb	0	1	0	0	3	0			
Gum Arabic, Turkey, fine, D.P.C. c	12	0	0	13	0	0	} c 6 0	5,595	5,613
Do. seconds, D.P. c	7	0	0	7	10	0			
Barbary, brown, BD. c	1	19	0	2	0	0			
Do. white, D.P. c	5	10	0				} c 6 0	4,305	5,410
E. I. fine yellow, BD. c	2	5	0	2	14	0			
Do. dark brown, B.D. c	1	15	0	2	5	0			
— Senegal garblings, D.P. c	3	0	0						
— Tragacanth, D.P. c	8	0	0	12	0	0			
Iceland Moss (Lichen), D.P. lb	0	0	2½	0	0	3			
Ipecacuanha Root, B.D. lb	0	1	3						
Jalap, BD. lb	0	3	0						
Manna, flaky, BD. lb	0	3	6						
Sicilian, BD. lb									
Musk, China, BD. oz	1	0	0	3	10	0			
Myrrh, East India, BD. c	5	0	0	14	0	0	} c 6 0	115	189
Turkey, BD. c	2	0	0	11	10	0			
Nux Vomica, BD. lb	0	8	0	0	9	0			
Opium, Turkey, B.P. lb	0	9	0						
Peppermint, Oil of, F. BD. lb	0	10	6						
Quicksilver, BD. lb	0	3	11						
Rhubarb, East India, BD. lb	0	6	0	0	8	0			
Dutch, trimmed, D.P. lb	0	8	0	0	9	0			
Russian, BD. lb	0	7	6	0	8	6			
Saffron, French, BD. lb									
Spanish lb	1	0	0						
Sarsaparilla, Honduras, BD. lb	0	1	0	0	1	9			
Lisbon, BD. lb	0	2	0						
Scammony, Smyrna, D.P. lb									
Aleppo lb	0	18	0	1	0	0			
Senna, East India, BD. lb	0	0	3	0	0	4			
Alexandria, D.P. lb	0	1	6	0	1	8			
Smyrna, D.P. lb	0	1	0	0	1	3			
Tripoli, D.P. lb	0	1	0	0	1	3			

‡‡‡ BD. In Bond. — c. Cwt. — B. P. British Possessions. — F. Foreign. — D. P. Duty paid.

INDEX to VOL. XXVI.

(VOL. II. FOR THE SESSION 1839-40.)

A.

ABDOMEN, Mr. M'Whinnie's case of transposition of the viscera of the, accompanied with an unusual variety in the venous system, 31.

Abortion of five fœtuses in the third month, Dr. Kennedy's case of, 528.

Abscess, mammary, Mr. Ferrall's clinical lecture on, 253.

Acetate of lead, Dr. Henderson on the employment of, in bronchitis, 263.

Acid, muriatic, Dr. R. D. Thomson on the proofs of the presence of, in the stomach, during digestion, 24.

Adams, Mr. J. A. on an improved hook for steadying the eye during the operation for strabismus, 839.

——— on the use of the blunt hook during the operation for strabismus, 866.

——— description of a knife which he has found well adapted for operating with in strabismus, 910.

Aikin, Mr. further remarks by, on the renewal of the vaccine virus, 139.

Albuminuria, Dr. Hughes' report on, 499.

Alcock, Mr. Rutherford, the Jacksonian prize for 1840 awarded to, for an essay on injuries of the brain, 160; on severe injuries of joints and their treatment, 282; note from, in reply to a suggestion for some improvement in the mode of delivering the prizes at the College of Surgeons, 607.

———'s, Mr. Benjamin, remarks on the Irish College of Surgeons, 806.

Alexander, Dr. on the Horley Green chalybeate, 309.

Alison, Dr. on the management of the poor in Scotland, 280.

———'s observations on the management of the poor in Scotland, reviewed, 664.

Alkaloids, Mr. Kemp on re-agents for the, 185.

Allium ursinum, on the employment of, in scurvy, 425.

Anasarca after scarlatina, Dr. Hughes' report on, 418.

Anatomist's vade-mecum, by Mr. Erasmus Wilson, reviewed, 303.

Andral's, M. lectures on the alterations of the blood, 171, 217, 297.

Aneurism, popliteal, Mr. Bullock's case of, 266.

——— Dr. Theophilus Thompson's case of, supposed to have opened into the pericardium a considerable time before death, 517, 906.

Aneurisms, Mr. Thurnam on, 360.

Announcement, an alarming, 473.

Antrum, fungus of the, clinical remarks on, by Mr. Ferrall, 256.

Ants, living, Dr. Schreiber on the use of, 474.

Aorta, Dr. Osborne on diseases of the valves of the, 601.

Apoplexy (meningeal hæmorrhage) of newborn infants, Dr. Burgess on the, 492.

Apothecaries' Hall, lists of gentlemen who have received certificates from, 80, 160, 240, 287, 400, 480, 528, 560, 672, 704, 816, 848, 880, 928, 960, 992.

Aquo-capsulitis, Mr. Hocken's case of, with hypopion and ulcer of cornea, 460.

Arm presentation, Mr. J. F. Kennedy's case of, 34.

Armies, the French and English, mortality of the, 155.

Armstrong, Mr. on tapping the head in cases of congenital hydrocephalus, 226.

Arnott's, Mr. case of contused artery, 76; case of large osseous tumor of the uterus, nearly filling the true pelvis, and occupying part of the left iliac region, 120; case of medullary tumors affecting the diploe and cancellated structure, in numerous distinct bones of the skeleton, 201; case of ununited fracture through a node on the tibia, 447; case of fatty tumor lodged under the tongue, at the side of the frænum, 558.

Arsenic, Mr. Jones on pytalism from the medicinal use of, 266.

- Artery, middle meningeal; Mr. Craig on a case of rupture of the, 206; the brachial, Mr. Barrett's case of puncture of, 229.
- Ascites, Mr. Ayres on the nature of the fluid in, 224; on a case of, 864.
- Association of Physicians, Dublin, papers read at the:—Dr. Thomas Brady on murder by drowning, 365; Dr. Law on the concurrence of empyema and phlegmasia dolens, 366; Dr. Osborne on diseases of the aortic valves, 601.
- Ayres, Mr. on the nature of the fluid in ascites, 224; particulars respecting a case of, 864.
- B.
- Babington's, Mr. flora of the Channel Islands, reviewed, 629.
- Badham, Dr. John, notice of the death of, 559.
- Bainbridge's, Mr. case of large tumor in the brain, 119; case of placental presentation, 203.
- Barrett, Mr. on hæmorrhage from leech-bites, 80; case of puncture of the brachial artery, 229.
- Barham's, Dr. case of glanders, 511.
- Baths, Russian, as remedies against the bite of mad beasts, 475.
- Bentley, Mr. on the preparation of extract of conium, 346.
- Bethlem hospital, report of the Charity Commissioners respecting, 137.
- Billing, Dr. on the causes of the sounds of the heart, 64.
- Bird's, Dr. medico-chemical history of milk, 43; on the occurrence of cerebral disorders in connexion with diseased kidneys in children, 432.
- Mr. cases illustrative of the cerebral symptoms induced by disease of the kidneys, 635.
- Birt's, Mr. singular case of swallowing pins, 582.
- Black's, Dr. manual on the bowels, reviewed, 725.
- Bladder, Dr. Boyd's case of malformation of the, 558.
- Blake, Mr. James, on the increase of mortality at the decennial periods, 195.
- Bleeding from leech-bites, Mr. Spender on, 34.
- Blood, M. Andral's lectures on alterations in the:—General and preliminary observations, 171; importance of attending to the state of the blood, 172; nature of the alteration which this fluid undergoes, *ib.*; such change affects its quantity or its quality, *ib.*; changes of quantity, 173; phenomena attending plethora and anemia, *ib.*; disorders produced by anemia in the functions of nutrition, 217; alterations of the blood as to quality, 218; microscopic researches on the blood, 297; alterations in the composition of the blood, *ib.*
- Blood, Mr. Gulliver on the corpuscles of the, 74.
- , the maternal, Dr. Lee on the circulation of, in the human ovum, during the early months, 833.
- Bloxam, Mr. on the structure of the human placenta, and its connexion with the uterus, 74.
- Blundell's, Dr. principles and practice of obstetric medicine, reviewed, 549.
- Bochdalek's, Dr. pathological examinations on the organs of hearing and speech in the deaf and dumb, 778.
- Bodington's, Mr. essay on the treatment of pulmonary consumption, reviewed, 725.
- Bone, normal and adventitious, Mr. Smee on the structure of, 73.
- Bones, fractured, Mr. Meade on the mode of union of, 517.
- Books, analyses and notices of:—Lindley's theory of horticulture, 36; Newman's history of British ferns, 37; Dr. Hunter on the influence of artificial light in causing impaired vision, and on some means of preventing or lessening its injurious action on the eye, 68; Dr. Burne on the consequences and causes of habitual constipation, 303; Mr. Erasmus Wilson's anatomist's vade-mecum, 306; Dr. Lee's pathological observations on the uterus, 356; Dr. Hamilton's practical observations on various subjects relating to midwifery, 389; specimen of pathology of ancient Greeks, 395; Mr. Owen's odontology, 438, 591; Mr. Streeter's practical observations on abortion, 468; Mr. Percivall's hippopathology, 470; Dr. Blundell's principles and practice of obstetric medicine, 549; Mr. Nasse's elementary exercises for the use of young physicians in observing and judging of disease, 551; Dr. Pagan's medical jurisprudence of insanity, 553; Mr. Stafford on diseases of prostate gland, 626; Mr. Willshire's principles of botany, 628; Mr. Babington's flora of the channel islands, 629; Mr. Northon on blindness from cataract, 664; Dr. Alison on the management of the poor in Scotland, *ib.*; Mr. Davies' practical remarks on iodine locally applied, 66; Mr. Bodington on the treatment and cure of pulmonary consumption, 725; Dr. Black's manual on the bowels, *ib.*; Dr. Combe on the physiological and moral management of infancy, 726; transactions of the Provincial, Medical, and Surgical Association, vol. 13; Dr. Müller on the nature and structural characteristics of cancer, 766, 840; Dr. Bull on the maternal management of children, 770; Mr. Chavasse's advice to mothers on the management of their offspring, 771; Dr. D. D. Davis on acute hydrocephalus, 869; Mr. Hill's cursory

- notes on the morbid eye, 871; Mr. Braithwaite's retrospect of practical medicine and surgery for the year 1840, 947.
- Borrett's, Mr. two cases of acute inflammation following the removal of foreign bodies from the œsophagus, 758.
- Boyd's, Dr. case of polypus of the heart, 445; case of malformation of the bladder, 538.
- Brachial artery, Mr. Barrett's case of puncture of the, 229.
- Brady, Dr. Thomas, on a case of murder by drowning, 365.
- Braithwaite's, Mr. retrospect of the practice of medicine and surgery for 1840, reviewed, 947.
- Breast, case in which a sero-cystic tumor was removed from the, by Mr. T. B. Curling, 429.
- Bright's, Dr. case of intestinal concretion of phosphate of lime, 76.
- Brodie, Sir Benjamin, testimonial to, 128, 759.
- Brodribb, Mr. on the physiology of the iris, 351.
- Bronchitis, Dr. Henderson on the employment of acetate of lead in, 263.
- Brush's, Mr. case of glanders or farcy, 105; case of glanders communicated by a patient in St. Bartholomew's to the nurse, 183.
- Buchanan's, Dr. fatal cases of obstruction and enormous distension of the belly, arising from a peculiar conformation of the colon, 99, 143; remarks on the ergot of rye, 464; case of extraction of a portion of catheter from bladder, 587.
- Bullock's, Mr. case of popliteal aneurism, 266.
- Bull, Dr. on the maternal management of children, reviewed, 770.
- Burials, weekly accounts of, from the Bills of Mortality, 48, 80, 160, 208, 240, 287, 320, 368, 400, 447, 480, 528, 560, 607, 640.
- Burgess, Dr. on apoplexy of new-born infants, 492.
- Burne, Dr. on the nature and causes of habitual constipation, reviewed, 303.
- Busk's, Dr. case of fracture of the leg, with some peculiar circumstances, 97; case of excision of the elbow-joint, 687.
- C.
- Calculus, spontaneous discharge of a, occurring twice in the same patient, 46.
- , biliary, Mr. Taylor on a new species of, 383.
- Campbell's, Dr. case of extraction of pencil from bladder by the lateral operation, 434.
- Cancer of the veins, Dr. Langenbeck on the formation of, 316.
- Cancrum oris, Dr. Cory's account of a case of, in which a legal inquiry was instituted, 876.
- Cape, Dr. meeting of pupils of, at St. Thomas's Hospital, to express their respect towards him, and disapprobation of certain articles published in the *Lancet*, 399.
- Carlisle's, Sir Anthony, letter on the College of Surgeons, 78.
- Carbuncles, method for the cure of, 606.
- Cases or conclusions? editorial article, 471.
- Catheter, Dr. Buchanan on a case in which a portion of a, was extracted from the bladder, 585.
- Cataract, Mr. Harvey on the operation for, 511; Dr. Franz on the solution of, 793; note on the operation for, 816.
- Cavernous sinus, Dr. Mercer on the, with the description of an additional sinus, occasionally found in its external wall, 267.
- Cæsarean operation, notice of the recent performance of the, by Mr. Whitehead, of Manchester, 897.
- Cederschild, Professor, on a case of congenital umbilical hernia, 238.
- Ceely's, Dr. observations on the variolæ vaccinæ, 683, 715.
- Cerebral disorders, Dr. Golding Bird on the occurrence of, in connexion with diseased kidneys, in children, 432.
- Cerebellum, Dr. Greene's case of deficiency of the, 848.
- Charity commissioners' reports on hospitals: St. Bartholomew's, 11; St. Thomas's, 58; Guy's, 90; Bethlem, 137; editorial remarks on the reports of the, 195.
- Chambers, Dr. portrait of, to be presented by the pupils as a tribute of respect on his retirement from St. George's, 120.
- Chambers's, Mr. case of puerperal convulsions, 796.
- Chavasse's, Mr. advice to mothers on the management of their offspring, reviewed, 771.
- Cheyne's, Mr. case of fatal spasmodic affection of the throat, 258.
- Children, Dr. Collin on the diseases of, 234.
- Cholera, notice of a set of tables by Dr. Graves, illustrating the progress of, 360.
- Churchill, Mr. of Dublin, on the effects of parturition on the nervous system of the mother, 186.
- Clarke, Mr. Robert, observations by, on the disease lethargus, 976.
- Clavicle, Mr. Ferrall's clinical lecture on necrôsis of the, 255.
- Clendinning, Dr. on disease of the heart, 284; notice by, of a fibrinous clot in the arch of the aorta, 364; case of cartilaginous deposition on the surface of the spleen, 447.
- Clinical instruction, on the deficiency of, at Vienna, 662.

- College of Surgeons, Sir Anthony Carlisle's letter respecting the, 78; three studentships in human and comparative anatomy established by the, 400; election of president and vice-presidents for the year ensuing, 782; subject for the Collegial triennial prize, *ib.*; for the Jacksonian prize, 783.
- College of Surgeons, list of gentlemen admitted members, 816, 848-960.
- College of Surgeons, Mr. Gray on the examinations at the, 476.
- College of Physicians' degrees, an erroneous notion respecting, corrected, 203; subjects for the examinations at the, 285; Dr. Taylor's remarks on their privilege of granting degrees, 287; on the privileges of, to confer degrees, by M. D., Oxon, 320.
- College of Physicians of Edinburgh, Mr. Phillips's remarks on the pharmacopœia of the, 271.
- Coles, Mr. on vaccination, 625; on the statistics of small-pox, 704.
- Collin, Dr. on the diseases of children, 234.
- Combe's, Dr. treatise on the physiological and moral management of infancy, reviewed, 726.
- Coinum, Mr. Bentley on the preparation of the extract of, 346.
- Constipation, extraordinary case of, related by Mr. Oliver, 227; habitual, Dr. Burne's treatise on the causes and consequences of, reviewed, 303.
- Convulsions, puerperal, Mr. Chambers's case of, 796.
- Conjunctiva, Mr. Hocken's case of hæmorrhage from the, 837.
- Copper, M. Orfila on the detection of poisoning by, 637.
- Cory's, Dr. E. A. case of cancrum oris, in which a medico-legal inquiry was instituted, 875.
- Court appointments, 704.
- Craniotomy, Mr. Robertson's case of, for hydrocephalus, 585.
- Craig, Mr. on a case of rupture of the middle meningeal artery, 206.
- Croton oil, on the external application of, 605.
- Croup, Dr. Hannay on the treatment of, 582; on the pathology and treatment of, 746; Mr. Robbs on the treatment of, 660; Mr. Yate on the treatment of, 907.
- Crowfoot's, Mr. Hinchman, case of fractured spine treated by extension, 600.
- Cuba, Dr. Turnbull on the climate of, 48.
- Cuba honey and wax, 128.
- Cumin, Dr. notice of the resignation by, of the professorships of midwifery in the University of Glasgow, 640.
- Curling's, Mr. T. B. case of sero-cystic tumors of the breast, removed by operation, with observations on the propriety of operating in cases of prostration from extreme apprehension, 429.
- Curling, Mr. T. B. note from, correcting a misstatement in the report of his evidence at a Coroner's inquest in a case of cancrum oris, 928.
- Cursham's Dr. case of atrophy of the gall-bladder, 388.
- Cutaneous eruptions, Dr. Kennedy's notes on iodine as a remedy for, 260.
- Cysticercus cellulosæ, Mr. Estlin's second case of, between the conjunctiva and sclerotica, 35.

D.

- Davies, Mr. on the application of iodine externally, 46.
- Davies', Dr. practical remarks on the use of iodine locally applied, reviewed, 665.
- Davis's, Dr. D. D. treatise on acute hydrocephalus, reviewed, 869.
- Deaf and dumb, some pathological examinations on the organs of hearing and speech in the, 778.
- Decidua, Dr. Murphy on the situation of the, in cases of extra-uterine gestation, in a letter to Dr. Robert Lee, 513.
- Delirium tremens from debauchery, remedy for, 475.
- Diabetes mellitus, Dr. Maitland on the indications to be fulfilled in, 307.
- Disease and mortality in the metropolis, Dr. Gregory on the statistics of, 121.
- Dislocation, spontaneous, of the dorsum of the ilium, Dr. Durrant's case of, 306.
- Dislocation, a rare, Mr. Haydon on a, 912.
- Dorrington's, Mr. case of functional derangement of vision, 838.
- Douglas's, Mr. case of cartilaginous tumor, 509.
- Douglas, Mr. on the nerve of Wirsberg, 228.
- Drinks, Dr. Gallwey on the physiology of, and their influence on the body in health and disease, 353, 379.
- Dropsy, ovarian, Dr. Ogden's case of, 348.
- Dropsy, renal, Dr. Hughes on, 499.
- Drugs, lists of, on sale in the English market, 479, 608, 736, 992.
- Dubois, M. account by, of a case in which premature labour was artificially induced in a dwarf, 237.
- Duffin, Mr. on some of the causes and consequences of failure of the new operation for the cure of strabismus or squinting, 940, 976.
- Duncan, Dr. on the mortality of Liverpool, 205.
- Durrant's Dr. case of spontaneous dislocation of the dorsum of the ilium, 306.
- Durrant, Dr. on congenital peculiarity in the structure of the heart, 509.
- Dwarf, premature labour artificially induced in a, by M. Dubois, 237.

E.

Economus', Dr. Sophocles, specimen of the pathology of the ancient Greeks, reviewed, 395.

EDITORIAL ARTICLES:—London, ancient and modern, 37; Institutions for special diseases, 70; physical condition of the working classes, 110; mortality of the French and English armies, 155; reports of the Charity Commissioners, 195; on exclusive systems in medicine, 230; Poor Law Commissioners' report to Lord Normanby, 277, 357; preliminary examinations, 310; Union surgeons, 396; Foundling hospitals and their effects, 440; cases or conclusions, 471; theory and practice, 514; the vaccination bill, 553; medical reform in Ireland, 597; in France, 629, 726; question of insanity—the trial of Edward Oxford, 663; have our medical examinations improved? 693; medical education in France, 772; health of the navy, 803; management of the poor in Scotland, 844, 871; what is wanted in medical literature, 920; Union surgeons, 922; new prizes for the *materia medica*, 946;

Education, medical, in France, editorial observations on, 772.

Education, continental, remarks on, 917.

Edwards's, Mr. D. O. problems in medical etiquette, 199.

Edwards, Mr. on Mr. French's improvements in the operation for strabismus, 927.

Elbow-joint, Mr. Busk's case of excision of the, 687.

Empyema, Mr. J. B. Thomson's case of, with pneumo-thorax, 795.

Emphysema, Dr. Hutton's case of, of the submucous tissue of the stomach, 559.

Empyema and phlegmasia dolens, Dr. Law on the concurrence of, 366.

England, Dr. on the appearance of hooping-cough more than once in the same individual, 352.

Entozoa of the human eye, Dr. Franz on the, and of other vertebralia, 330.

Ergot, Mr. Lever on the etherial solution of, 109, 240.

Ergot of rye, Dr. Buchanan on the, 464.

Erysipelas, M. Velpeau's clinical lectures on:—various diseases confounded with erysipelas, 809; erysipelas properly so called, 810; angioleucitis, 811; phlebitis, 812; phlegmonous erysipelas, *ib.*; treatment, 827.

Estlin's, Mr. second case of *cysticercus cellulose* between the conjunctiva and sclerótica, 34.

Etiquette, medical, problems in, by Mr. D. O. Edwards, 199.

Examinations, preliminary, editorial observations on, 310.

Examinations, medical, have they improved? 693.

Extra-uterine gestation, Mr. G. H. Park's case of, 640.

— foetation, singular example of, 126.

Eye, Mr. Middlemore on the treatment of certain injuries of the, occurring in infants and young persons, 721.

F.

Faraday, Dr., on the source of power in the voltaic pile, 123.

Farcy and glanders, Mr. Percivall on, 276.

Ferrall's, Mr. clinical lectures delivered at St. Vincent's hospital, Dublin:—periostitis, 113; on mammary abscess, 253; on necrosis of the clavicle, 255; on fungus of the antrum, 256; on gastritis, 412.

Fergusson, W. Esq. professor in King's College, testimonial to, 320.

Fever, Dr. Hughes' report on, 341.

Fleming's, Mr. practical observations on peculiar affections of the throat, arising from abscess between the pharynx and spine, and occurring in children and adults, 855, 985.

Foundling hospitals, editorial observations on the effects of, 440.

Fracture of the leg, Mr. Busk's case of, with some peculiar circumstances, 97.

Fracture, ununited, Mr. Arnott's case of, through a wound on the tibia, 447.

Franz, Dr. on the cure of squinting by dividing the rectus internus muscle, 154; on the entozoa of the human eye, and of other vertebralia, considered with reference to their natural history, and in a nosological point of view, 330; cases of strabismus, 465; physiological observations on eyes operated on for strabismus, 538; report of cases in which the new operation for strabismus proved insufficient, 689; on the solution of cataract, 798.

Franz, Dr. account by, of an instrument for the cure of myopia, 866.

French's, Mr. remarks on the new operation for strabismus, 763.

Fungus of the antrum, clinical remarks on, by Mr. Ferrall, 256.

Gall-bladder, Dr. Cursham's case of atrophy of the, 388.

Gallwey, Dr. on the physiology of drinks, and their influence on the body in health and disease, 353, 379.

Gastritis, Mr. Ferrall's clinical lecture on:—subacute gastritis a frequent complication of other diseases, 412; necessity for being familiar with its symptoms and treatment,

- ibid; cases of subacute gastritis treated by depletion and diet, 413.
- Gestation, extra-uterine, Dr. Lee on the situation of the deciduous membrane in cases of, 436.
- Glanders, on the communicability of, to the human subject, 160.
- Mr. Brush's case of, communicated by a patient in St. Bartholomew's, to the nurse, 183; case of, 105.
- Dr. Barham's case of, 511.
- Mr. Percivall on, in the human subject, 276.
- Gorham's, Mr. case of extraordinary development of the mammae in the human adult, 650.
- Graefe, notice of the death of, 669.
- Grantham, Mr. on the premonitory signs of insanity, 967.
- Graves's, Dr. tables illustrating the progress of cholera, noticed, 360; case of tubercular phthisis, 672.
- Gray, Mr. on the examinations at the College of Surgeons, 476.
- Gregory, Dr. on the statistics of disease and mortality in the metropolis, 121; on the statistics of small-pox, 545; on vaccination, 658.
- Greene's, Dr. case of small-pox pustule in the bladder, 480; case of deficiency in the cerebellum, 848.
- Griffin, Dr. William, on the "reflex function," 750.
- Gulliver, Mr. on the corpuscles of the blood, 74.
- Guy, Dr. on the frequency of the pulse at different ages in males and females, 17.
- Guy's hospital, report of the Commissioners of Charities respecting, 90.
- H.
- Hæmorrhage from leech-bites, Mr. Barrett on, 80.
- from the conjunctiva, Mr. Hocken's case of, 837.
- Hall's, Dr. Marshall, third memoir on some principles of pathology in the nervous system, 600.
- Hall, Dr. J. C. on the causes, symptoms, and treatment, of suppression of urine, 176; on the treatment of fistula in ano, with remarks on the operation of M. Roux, in the Hôtel Dieu, Paris, 571; on an operation in a case of very large strangulated hernia, with some remarks on the treatment of similar cases, 652; on secondary depôts of matter, 897, 936.
- Hamilton's, Dr. practical observations on various subjects relating to midwifery, reviewed, 396.
- Hannay, Dr. on venereal affections of the nose, 279; on œdema pulmonum occurring in parturient women, 624; on the treatment of croup, 583, 746.
- Harrison, Mr. on the connexion of tubercle with a deficiency of the colouring matter of the blood, and on the exhibition of iron, 913.
- Harrison's, Mr. case of successful extirpation of the uterus, 151.
- Harvey, Mr. on the operation for cataract, 541.
- Harvey's, Mr. G. plan of medical reform, 799.
- Hawkins, Mr. Charles, on pendulous tumors of the labium, 283; on a case in which a coagulum was found in the femoral vein, ib.; on calcareous deposit on the mucous lining of the bladder, ib.; note from, supplying an omission in the report of cases of tumors, 365.
- Hawkins's, Mr. Cæsar, clinical lecture on polypus of the nose, 697, 731.
- Haydon, Mr. on a rare dislocation, 912.
- Health of the navy, editorial observations on the, 803.
- Heart, Dr. Billing on the causes of the sounds of the, 64.
- Dr. John Reid on the sounds of the, 238.
- Dr. Stroud's case of spontaneous rupture of the, into the pericardial sac, under which life continued about two hours, 904.
- Dr. Clendinning on disease of the, 284.
- Dr. Boyd's case of polypus of the, 445.
- Dr. Jeffery's case of rupture of the, 465.
- Mr. Smith's case of rupture of the right ventricle of the, 559.
- Dr. Durrant on congenital peculiarity in the structure of the, 509.
- Dr. Stroud's case of spontaneous rupture of the, under which life continued for about ten hours, 518.
- Heine, Dr. operations performed by, at Cronstadt, with his osteotome, 604.
- Henderson, Dr. on acetate of lead in bronchitis, 263.
- Hernia, inguinal and femoral, Mr. Morton on the changes which are produced in the form and structure of the abdominal parietes by, 26.
- scrotal, Mr. Southcomb's case of, with extensive ulceration and perforation of the intestines, 691.
- large strangulated, Dr. J. C. Hall's case of, for which an operation was performed, 652.
- congenital umbilical, successful treatment of a, by Professor Cederschjold, of Stockholm, 238.
- Hemoptysis, epidemic, cured by the lichen pulmonarius, 607.
- Hingston, Mr. J. A. on chronic peripneumonia, 763.

Hocken's, Mr. case of aquo-capsulitis, with hypopion and ulcer of cornea, 460; cases of hæmorrhage from the conjunctiva, 837; on the pathology of strabismus, 943.

Hooping-cough, Dr. England on the appearance of, more than once in the same individual, 352.

Horley-Green chalybeate, Dr. Alexander on the, 309.

Hughes's, Dr. reports of cases:—on fever, 341; scarlatina, 418; renal dropsy—albuminuria, 499; rubeola, 579; phthisis, 618.

Hull's, Mr. cursory notes on the morbid eye, reviewed, 371.

Hunter, Dr. on the influence of artificial light in causing impaired vision, and on some means of preventing or lessening its injurious action on the eye, 68.

Hunterian museum, complaint of the inaccessibility to some of the preparations, 466.

Hurd, Mr. on inversion of the uterus, 836.

Hutton's, Mr. case of emphysema of the submucous tissue of the stomach, 559.

Hutchinson, Mr. on the identity of puerperal peritonitis with epidemic erysipelas, 159.

Hydrocephalus, congenital, Mr. Armstrong on tapping in, 226.

———— acute, Dr. D. D. Davis's treatise on, reviewed, 869.

———— remedy for, in Russia, 480.

Hydrophobia, Russian remedy for, 476.

———— Dr. Rankin on iodine as a remedy for, 548.

Hypertrophy, morbid, of the muscular system, 79.

I.

Hott's, Mr. case of detached abdominal tumor, 693.

India, how to keep cool in, 879.

Indigo, the use of, in intermittent fever, found of benefit, 605.

Inflammation, acute, Mr. Borrett's two cases of, following the removal of foreign bodies from the œsophagus, 758.

Insanity, editorial observations on, with reference especially to the trial of Edward Oxford, 666.

————, Mr. Grantham on the premonitory signs of, 967.

Institutions for special diseases, editorial observations on, 68.

Intestinum ileum, Dr. Williamson's case of rupture of the, from the kick of a horse, 349.

Iodine, Mr. Davies on the external application of, 46.

———— Dr. Kennedy's notes on, as a remedy for cutaneous eruptions, 260.

———— Dr. Rankin on, as a remedy for hydrophobia, 548.

Irish College of Physicians, privileges conferred by the charter of the, 240.

Irish College of Surgeons, Mr. Benjamin Alcock's remarks on the, 806.

Iris, Mr. Brodribb on the physiology of the, 351.

J.

Julius's, Dr. of Hamburg, account of Laura Bridgman, an American girl with only one sense, 313.

Jacksonian prize for 1840 awarded to Mr. Rutherford Alcock for an essay on injuries of the brain, 160.

Jackson's, Dr. case of rupture of the uterus, 347.

Jeffery's, Dr. case of rupture of the heart, 464.

Jones, Mr. Wharton, on single vision, 73.

Jones, Mr. on ptyalism from the medicinal use of arsenic, 266.

Joints, Mr. Rutherford Alcock on severe injuries of, and their treatment, 282.

Jörg's, Dr. C. G. medical experiments, 892, 851.

K.

Kemp, Mr. on some re-agents for the alkaloids, 185.

Kennedy's, Mr. J. F. case of arm presentation, 34.

Kennedy's, Dr. notes on the effects of iodine as a remedy for cutaneous eruptions, 260; case of abortion of five fœtuses in the third month, 528.

Kidney, Mr. Phillips on a case of disease of the, 556.

Kidneys, Mr. Bird's cases illustrative of the cerebral symptoms induced by disease of the, 635.

King, Mr. T. Wilkinson, on the influence of the left bronchus in closing the ductus arteriosus at birth, and some correlative circumstances in pathology and comparative anatomy, 622.

Kingston's, Dr. case of adhesion of one of the semilunar valves of the aorta to the surface of that vessel, 202; account of a preparation exhibiting an adhesion of one of the aortic valves to the aorta, and an occlusion of the left coronary artery, 761.

Kreosote, Mr. Ferrall on the efficacy of, in obstinate vomiting, 413.

L.

Labium, Mr. Charles Hawkins on pendulous tumors of the, 283.

Labour, premature, artificially induced in a dwarf, by M. Dubois, 237.

Langstaff's, Mr. case of dislocation of the elbow-joint, 118.

Langenbeck, Dr. of Gottingen, on the formation of cancer of the veins, and the

- possibility of communicating cancer from man to animals, 316.
- Laura Bridgman, an American girl with only one sense, account of, by Dr. Julius, of Hamburg, 313.
- Law, Dr. on the concurrence of empyema and phlegmasia dolens, 367.
- Lawrie's, Dr. cases illustrative of the poisonous and injurious effects of the hydriodate of potash and iodide of starch, 538.
- Lever's, Mr. case of tumor in the pelvis, impeding parturition, 600.
- Leeches, mode of gathering in Russia, 880.
- Leech-bites, Mr. Spender on bleeding from, 34.
- , Mr. Barrett on hæmorrhage from, 80.
- Lee, Dr. on the nerves of the gravid uterus, 41; on the circulation of the maternal blood in the human ovum during the early months, 833; on the situation of the deciduous membrane in cases of extra-uterine gestation, 436; pathological observations by, on the diseases of the uterus, reviewed, 356.
- Leese, Mr. on the degree of reliance to be placed on the records of vaccination, 110.
- Leg, Mr. Busk's case of fracture of the, with some peculiar circumstances, 97.
- Lendrick's, Dr. new instrument for tapping, description of, 815.
- Lethargus, observations on the disease so called, by Mr. Clarke, 970.
- Letheby, Mr. on a new oxyhydræcarbon, 67.
- Lever, Mr. on the etherial solution of ergot, 108; on the etherial solution of ergot, 240.
- Libel, action for: Syme v. Lizars, 281.
- Liquor amarii, notice of a case of jaundice in which it exhibited a deep yellow colour, 128.
- Lindley's Theory of Horticulture, reviewed, 36.
- Literature, medical, what is wanted in, 920.
- Liverpool Medical Institution, resolutions agreed to at a meeting of the, on the subject of the vaccination extension bill, 125; papers read at the:—Dr. Duncan on the mortality of Liverpool, 205; Mr. Craig on a case of rupture of the middle meningeal artery, 206.
- Lomas, Mr. on the cure of congenital strabismus, by dividing the M. rectus internus oculi, 109.
- London University, election of examiners, 281.
- Lumbrici in the hepatic ducts, Dr. Power's case of, 640.
- Lumsden, Dr. on the pathology of acute hydrocephalus, 858.
- M.
- Mackmurdo's, Mr. observations on the operation for strabismus convergens, 802.
- Maitland, Dr. on the indications to be fulfilled in diabetes mellitus, 307.
- Mammæ, Mr. Gorham's case of extraordinary development of the, in the human adult, 659.
- Mapleton's, Mr. singular case of imperforate vagina, and vicarious menstruation from the bladder (?) with uninterrupted regularity for twenty-seven years, 543.
- Matter, Dr. J. C. Hall on secondary depôts of, 897, 936.
- Mayo, Mr. on malignant tumors connected with bone, 55; disavowal by, of having given a certificate in favour of Holloway's ointment, 208; on the effects of dividing the inner straight muscle of the eye, for the cure of strabismus, 434.
- Meade, Mr. on the mode of union of fractured bones, 517.
- Medical reform, observations on, by a Professor in the School of Physic in Ireland, 125.
- Medical association of Ireland, resolutions passed at a meeting of the, 523.
- experiments, by Dr. C. G. Jörg, account of, 892, 951.
- literature, what is wanted in, 920.
- Medicine, editorial remarks on exclusive systems in, 230.
- thoughts on, 808, 926, 960.
- Medicines, indigenous, Dr. Walker on, 386.
- Mellor's, Mr. case of malformation of the œsophagus, 542.
- Mercer's, Dr. observations on the cavernous sinus, with the description of an additional sinus occasionally found in its external wall, 267.
- Meteorological journals, 48, 80, 160, 208, 240, 287, 320, 368, 400, 447, 480, 528, 560, 607, 649, 672, 704, 784, 816, 848, 880, 960, 990.
- Middlemore, Mr. on the treatment of certain injuries of the eye occurring in infants and young persons, 721.
- Midwifery, Dr. Hamilton's practical observations on various subjects relating to, reviewed, 396.
- Military hospital, Edinburgh, report from the, 877.
- Milk, medico-chemical history of, by Dr. Bird, 43.
- Mortality, improved tables of, showing the number of deaths from all causes, 127, 287, 478, 608, 991.
- Mortality of the French and English armies, 155.
- Mr. Blake on the increase of, at the decennial periods, 195.
- Morton, Dr. on some of the changes which are produced in the form and structure of the abdominal parietes by inguinal and femoral hernia, 26.
- Mouth, Mr. Nasmyth on the functions of the, and the structure of recent and fossil teeth, 203.
- Müller, Dr. on the nature and structural characteristics of cancer, reviewed, 766, 840.
- Murphy, Dr. letter from, to Dr. Robert Lee,

respecting the situation of the decidua in cases of extra-uterine gestation, 513.

M'Whinnie's, Mr. case of transposition of the thoracic and abdominal viscera, accompanied with an unusual variety in the venous system, 31.

Myopia, Dr. Franz on an instrument for the cure of, 806.

N.

Nasmyth, Mr. on the functions of the mouth, and the structure of recent and fossil teeth, 203; his reply to Mr. Owen, 545.

Nasse's, Mr. elementary exercises for the use of young physicians, reviewed, 551.

Navy, editorial observations on the health of the, 803.

Necrosis of the clavicle, clinical remarks on, by Mr. Ferrall, 255.

Neuralgia, Dr. Pidduck on the employment of strychnine for the cure of, 759.

Newman's, Mr. history of British ferns, reviewed, 37.

North, Mr. on hydatids of the uterus, 361.

Nose, Dr. Hannay on venereal affections of the, 276.

O.

Obré's, Mr. case of disease of the pons varolii, 77.

Œdema pulmonum in parturient women, 624.

Œsophagus, Mr. Mellor's case of malformation of the, 542.

Ogden's, Dr. case of ovarian dropsy, 348.

Oliver's, Mr. extraordinary case of constipation, 227.

Ophthalmia, Mr. F. Roberts on the causes of, in Malta, 20.

Orfila, M. on the detection of poisoning by copper, 637.

Osborne, Dr. on diseases of the aortic valves, 601.

Ovarian dropsy, Dr. Ogden's case of, 348.

Owen's, Mr. H. K. case of viper-bite, 837.

Owen's, Mr. Odontography, reviewed, 438, 591; reply by, to the review of his "Odontography," 503; rejoinder to Mr. Nasmyth, 637*.

Oxyhydrocarbon, a new, Mr. Letheby on, 67.

P.

Pagan's, Dr. medical jurisprudence of insanity, reviewed, 553.

Paris hospitals, admission of specialities into the, 319.

Park, Mr. on extra-uterine gestation, 640.

Parturition, Dr. Churchill, of Dublin, on the effects of, on the nervous system of the mother, 186.

Paterson, Dr. on the treatment of sprains by starched bandages, 261.

Pencil extracted from the bladder by the lateral operation, by Dr. Campbell, 434.

Percivall, Mr. on farcy and glanders, 276.

Percivall's, Mr. Hippopathology, reviewed, 470.

Periostitis, Mr. Ferrall's clinical lecture on, delivered at St. Vincent's Hospital, Dublin, 113.

Peripneumonia, chronic, Mr. Hingeston's observations on, 763.

Peritonitis, puerperal, Mr. Hutchinson on the identity of, with epidemic erysipelas, 159.

Pharmacopœia of the Royal College of Physicians of Edinburgh, Mr. Phillips's remarks on the, 271.

Pharynx and œsophagus, two remarkable cases of disease of the, 924.

Phillips's, Mr. B. lectures on the principles and practice of surgery—see "Surgery, Mr. B. Phillips's lectures on the principles and practice of."

Phillips's, Mr. Richard, remarks on the Pharmacopœia of the Royal College of Physicians, Edinburgh, 271.

Phillips, Mr. on a case of disease of the kidney, 556.

Phthisis, Dr. Hughes's report of cases of, 618.

Phthisis pulmonalis, old remedy for, 380.

Phthisis, tubercular, Dr. Graves's case of, 672.

Pidduck, Dr. on strychnine in neuralgia, 759.

Pins, singular case, in which a large number were swallowed, 532.

Placenta, the human, Mr. Bloxam on the structure of the, and its connexion with the uterus, 74.

Placental presentation, Mr. Bainbridge's case of, 203.

Poisoning by copper, M. Orfila's method for the detection of, 637.

Polypus of the nose, Mr. Cæsar Hawkins's clinical lecture on, 697, 731.

Poor law Commissioners' report to Lord Normanby, editorial observations on the, 277, 357.

Poor in Scotland, Dr. Alison on the management of the, 280.

Potash, hydriodate of, and iodide of starch, Dr. Lawrie on the poisonous and injurious effects of, 583.

Power's, Dr. J. case of lumbrici in the hepatic ducts, 640.

Prizes at the College of Surgeons, some improvement in relation to the delivery of the, suggested, 528; note from Mr. Rutherford Alcock, in reply, 607.

Prolapsus recti, Mr. Robert on a new operation for the cure of, 878.

Provincial Medical and Surgical Association, Vol. xiii. of the Transactions of the, reviewed, 726.

Provincial Medical Association, account of the meeting of the, at Southampton, 777.

- Public hygiene, editorial remarks on, 729.
- Pulse, Dr. Guy on the frequency of the, at different ages, in males and females, 17.
- Purdon, Dr. notice by, of a case in which the liquor amnii exhibited a deep yellow colour, 128.
- Pylorus, Mr. Ferrall on two forms of organic disease of the, generally distinguishable during life, 413; on stricture of the, without cancer, 414; cancer of the, without stricture, 416.
- Quinine, on the administration of, by the skin, 80.
- Rankin, Dr. on iodine in hydrophobia, 548.
- "Reflex function," Dr. Griffin on the, 750.
- Reform, medical, in Ireland, editorial observations on, 597.
- Reform, medical, in Ireland, editorial observations on, by a "Real Reformer," 775.
- Reform, medical, in France, editorial observations on, 629, 726.
- Reform, medical, Mr. G. Harvey's plan for, 799.
- Reform, medical, the session of parliament passed without any thing having been done towards, 847.
- Reid, Dr. John, on the sounds of the heart, 238.
- Robbs, Mr. on the treatment of croup, 660.
- Robert, M. on a new operation for the cure of prolapsus recti, 873.
- Roberts, Mr. Frederick (Assist. Surg. 59th reg.) on ophthalmia, particularly as it occurs in Malta, 20.
- Robertson's, Mr. case of craniotomy for hydrocephalus, 585.
- Roberton, Mr. on the large proportion of indigent or improvident families in the population of the town of Manchester, 750.
- Rokitansky's, Professor, three remarkable cases of diseases of the pharynx and œsophagus, 924.
- Royal Medical and Chirurgical Society papers read at the :—Mr. Bloxam on the structure of the human placenta and its connexion with the uterus, 74; Mr. Stafford's case of wound of the throat, 75; first meeting of the Pathological department, 75; Mr. Arnott's case of contused artery, 76; Dr. Bright's case of intestinal concretion of phosphate of lime, ib.; Dr. Watson's case of disorganizing inflammation of the valves of the heart occurring in connexion with acute rheumatism, 77; Mr. Obré's case of disease of the pons varolii, ib.; Mr. Langstaff's case of dislocation of the elbow-joint, followed by anchylosis of the ulna to the humerus, with ligamentous union of the radius, 118; Mr. E. Wilson's two preparations, exhibiting a multilocular appearance of the descending colon, 119; Mr. Bainbridge's case of large tumor in the brain, ib.; Mr. Arnott's case of large osseous tumor of the uterus, nearly filling the true pelvis, and occupying part of the left iliac region, 120; Mr. E. Wilson's case of tumor on the exterior of the thorax, 121; Mr. Hutchinson on the identity of puerperal peritonitis with epidemic erysipelas, 159; Mr. Arnott's case of medullary tumors affecting the diploe and cancellated structure, in numerous distinct bones of the skeleton, 201; Dr. Kingston's case of adhesion of one of the semilunar valves of the aorta to the surface of that vessel, &c., 202; Mr. Bainbridge's case of placental presentation, 203; Mr. Rutherford Alcock on severe injuries of joints, and their treatment, 282; Mr. Charles Hawkins on pendulous tumors of the labium, 283; on a case in which a coagulum was found in the femoral vein, ib.; on calcareous deposit on the mucous lining of the bladder, ib.; Dr. Clendinning on disease of the heart, 284; Mr. Thurnam on aneurisms, 360; Mr. North on hydatis of the uterus, 361; Mr. Shaw's two cases of tumors situated between the cerebellum and pons varolii, and compressing these parts, 362; Dr. Clendinning on a fibrous clot in the arch of the aorta, 364; note from Mr. C. Hawkins supplying an omission in the report of his cases of pendulous tumors, 365; Mr. Wickham on a case of aneurism of the innominata, in which the carotid and subclavian arteries were tied, 445; Dr. Boyd's case of polypus of the heart, ib.; Dr. Clendinning on a cartilaginous deposition on the surface of the spleen, ib.; Mr. Arnott's case of ununited fracture through a node on the tibia, 447; Mr. Meade on the mode of union of fractured bones, 587; Dr. Theophilus Thomson's case of aneurism, supposed to have opened into the pericardium a considerable time before death, 517; Dr. Stroud's case of spontaneous rupture of the heart into the pericardial sac, under which life continued for about ten hours, 518; Dr. Boyd's case of gangrene of the lung, ib.; Mr. A. Shaw's four preparations of aneurism of the arteria innominata: 1. Aneurism of the innominata of great size, orifice of the subclavian artery closed, obstruction of the veins, pressure on the axillary nerves, and on the trachea, absorption and disarticulation of the clavicle, 519. 2. Aneurism of the arteria innominata, obliteration of certain veins, obstruction of the thoracic ducts, 520. 3. Aneurism of the innominata, œdema of the head and neck and upper extremities, 522. 4. Aneurism of the innominata, ib.; Mr. Phillips's case of disease of kidney, 556; Mr. Mayo on malignant tumors connected with bone, 557; Dr. Boyd's case of congenital malformation of the bladder, 558; Mr. Arnott's case of fatty tumor lodged under the tongue at the outside of the frænum, ib.; Mr. Hinchman Crowfoot's case of fractured spine treated by extension, 600;

- Mr. J. C. W. Lever's case of tumor in the pelvis impeding parturition, with a postscript by Dr. Merriman, *ib*; Dr. Marshall Hall's third memoir on some principles of pathology in the nervous system, *ib*.
- Royal Society, papers read at the:—Mr. Smee on the structure of normal and adventitious bone, 73; Mr. Wharton Jones on single vision, *ib*; Mr. Gulliver on the corpuscles of the blood, 74.
- Rubeola, Dr. Hughes on, 579.
- Rumsey, Mr. H. W. remarks by, on the vaccination extension bill, 193.
- Russian practice, some account of, 474, 604, 880.
- S.
- Scarlatina, Dr. Hughes's report on, 418.
- Schreiber, Dr. on the external use of living ants, 474.
- Scott, Dr. on dividing the internal rectus muscle for the cure of strabismus, 463.
- Scurvy, on the employment of *allium ursinum* in, 475.
- Shand, Mr. on the agency of sound on the ear, 424.
- Shaw's, Mr. A. two cases of tumors between the cerebellum and pons varolii, 362; cases of aneurism of the arteria innominata, 518.
- Short-sightedness, Dr. Franz on the cure of, 866.
- Siebold's, Dr. case of twins, where one had been long dead, 45.
- Skeleton, a living, 207.
- Slaggett's, Mr. successful case of Taliacotian operation, 348.
- Small-pox and vaccination:—copy of a bill introduced by Mr. Wakley to prevent inoculation for the small-pox, and to extend the practice of vaccination, 444.
- Small pox pustule in the bladder, 480.
- Dr. Gregory on the statistics of, 544.
- Mr. Coles on the statistics of, 704.
- Smee, Mr. on the structure of normal and adventitious bone, 73.
- Smith's, Mr. case of rupture of the right ventricle of the heart, 559.
- Sound, Mr. Shand on the agency of, on the ear, 424.
- Southcomb's, Mr. case of scrotal hernia, with extensive ulceration and perforation of the intestines, 691.
- Spaeth, Dr. notice of a singular case of extra-uterine fœtation recorded by him, 126.
- Special diseases, editorial observations on institutions for, 68.
- Specialities, admissions of, into the hospitals of Paris, 319.
- Sponder, Mr. on bleeding from leech bites, 34.
- Spine, fractured, Mr. Hinchman Crowfoot's case of, treated by extension, 600.
- Sprains, Dr. Paterson on the treatment of, by starched bandages, 264.
- Squint-curing, query regarding, by Solomon One Eye, 990.
- Squinting, Dr. Franz on the cure of, by dividing the rectus internus muscle, 154.
- St. Bartholomew's hospital, report of the charity commissioners respecting: joint report of Mr. Wrottesley and Mr. Smith, 11.
- St. Thomas's hospital, report of the charity commissioners respecting, 58.
- Stafford's, Mr. case of wound of the throat, 75; his essay on the treatment of some affections of the prostate gland, reviewed, 626.
- Steinhæuser, Mr. on the cure of squinting, 336.
- Stokes, Dr. on hyperosteois of the ribs in chronic empyema, 639.
- Strabismus, congenital, Mr. Lomas on the cure of, by dividing the M. rectus internus oculi, 109.
- , various papers on the new operation for the cure of:—by Mr. Steinhæuser, 336; by Mr. Mayo, on dividing the inner straight muscle of the eye, 435; Dr. Scott on dividing the internal rectus muscle, 463; Dr. Franz's cases, 465; Dr. Franz's physiological observations on eyes operated on for strabismus, 538, 689; Mr. French's remarks on the operation, 763; Mr. Mackmurdo's observations on the operation, 802; Mr. J. A. Adams's improved apparatus for steadying the eye during the operation, 839; Mr. Adams on the blunt hook, 866; description of a knife considered to be well adapted for the operation, 910; Mr. Edwards on Mr. French's improvements on the process originally practised by Professor Dieffenbach, 927; Mr. Duffin on the consequences and causes of failure of the operation, 940, 976; Mr. Hocken on the pathology of strabismus, 943; Mr. Walne on, 979; query regarding the operation, by Solomon One Eye, 990.
- Streeter's, Mr. practical observations on abortion, reviewed, 468.
- Stroud's, Dr. case of spontaneous rupture of the heart into the pericardial sac, under which life continued for about ten hours, 518, 904.
- Strychnine, Dr. Pidduck on the employment of, in neuralgia, 759.
- Sunflowers in Russia, uses made of, 848.
- Surgery, Mr. B. Phillips's lectures on the principles and practice of:—
- LECT. 22.—Diseases of the skin, 1; warts, corns, *ib*; diseases of the cellular tissue, 2; furuncle, *ib*; anthrax, 3; tumors, 5; lipoma, encysted, *ib*; hydatid,

7; sarcomatous, fibro-nervous(?) 8; diseases and injuries of arteries, 9; general remarks, ib.

LECT. 23.—Wounds of arteries, 49; varieties, ib.; diagnosis and treatment, 50; astringents, styptics, absorbents, cauterisation, suture, acupuncture, 51; electro-puncture, seton, compression, 52; machure, refolement, torsion, ligature, 53; arteritis, 57.

LECT. 24.—Ossification of arteries, 81; dilatation, 82; contraction, obliteration, aneurism, 83; definition, varieties, ib.; spontaneous aneurism, 84; state of coats in, ib.; most common seat of, 85; causes, ib.; dissecting aneurism, 86; state of the blood in the sacs, 87; changes in the sac, 88; effects of pressure of sac on neighbouring organs, ib.; termination, symptoms, 89.

LECT. 25.—Prognosis of aneurism, 129; treatment by Valsalva's method, ib.; by cold, 130; by compression, ib.; by ligature of the sac, ib.; by tying above the sac, 131; consequences of the ligature—hæmorrhage, enlargement of tumor, gangrene, torsion, machure, &c., ib.; ligature beyond the sac, 133; agents acting upon the sac, 134; result of different methods, ib.; traumatic aneurism, 135; symptoms, prognosis, treatment, ib.; varicose aneurism, 136; symptoms, ib.; treatment, 137.

LECT. 26.—Diseases of veins, 161; symptoms, treatment, 162; inflammation or phlebitis, 163; characters, ib.; local signs, 164; general symptoms, 165; treatment, 168; air in veins, ib.

LECT. 27.—Varices, their nature, 209; varieties, ib.; treatment, 210; compression, ligature, incision, caustic, needles, extirpation, 211; muscular and tendinous systems, 212; wounds, contusions, ruptures, ib.; retractions and their treatment, ib.; club-foot, 214; nature, variety, modes of production, ib.; treatment, 215.

LECT. 28.—Reparation of tendons, 241; appreciation of means of treatment, ib.; permanent flexion of the leg, 243; causes, treatment, ib.; wry neck, nature, causes, 244; treatment, 245; strabismus, 247; retraction of the fingers, ib.; nature, causes, ib.; treatment, 249; diseases of tendinous and subcutaneous bursæ, their nature and treatment, 249.

LECT. 29.—Diseases of fibrous tissues, 289; inflammation of the periosteum, ib.; nature, symptoms, varieties, ib.; treatment, 292; diseases and injuries of osseous tissues, ib.; wounds of bone, ib.; fractures, 293; nature, varieties, ib.; symptoms, prognosis, 296.

LECT. 30.—General treatment of fractures, 321; nasal and malar bones, 328;

superior and inferior maxillary bones, 329.

LECT. 31.—Fracture of the sternum, ribs, costal cartilages, 369; ossa innominata, 370; scapula—body, spine, inferior angle, coracoid and acromion processes, neck, 371; clavicle, 372; humerus, 375; fore-arm, 377; radius, 378.

LECT. 32.—Fracture of the ulna, olecranon, and coronoid processes, 401; carpus, 402; metacarpal bones, ib.; fingers, 403; the femur, ib.; inferior extremity of the femur, 407; separation of the epiphyses, 408; great trochanter, ib.; lesser trochanter, ib.; neck of the femur, 409; symptoms, ib.; diagnosis, 411; prognosis, ib.

LECT. 32.—Treatment of fracture of the neck of the femur, 449; osseous union of neck, why unfrequent? ib.; patella, 450; symptoms, ib.; diagnosis, prognosis, treatment, 451; bones of the leg, 453; tibia and fibula, 454; bones of the foot, calcis, and other bones, 456; starch bandage, 457; inflammation of bone, 458; abscess, 459.

LECT. 33.—Caries, 481; necrosis, 485; tubercles in bone, 489; exostosis, 490.

LECT. 34.—Cysts in bone, 529; softening of bone, 530; rickets, 531; brittleness or fragility, 533; spina ventosa, ib.; osteo-sarcoma, 535; diseases of the articulating system, 537; sprains, their nature and treatment, ib.

LECT. 35.—Dislocations generally considered, 561; particular dislocations, 564; lower jaw, ib.; os hyoides, 566; luxation of bones of the pelvis, ib.; relaxation of pelvic symphyses, 567; luxation of the ribs and their cartilages, ib.; clavicle, 568; humerus, 569.

LECT. 36.—Dislocation of the humerus, 609; elbow-joint, 612; radius, 615; ulna, 616; radio-carpal articulation, 617.

LECT. 37.—Dislocation of os magnum, first metacarpal bone, ib.; fingers on the metacarpal bones, 642; phalanges, 643; femur, ib.; knee-joint, 649.

LECT. 38.—Dislocation of the patella, 673; fibula and foot, 674; astragalus, 676; tarsus, ib.; metatarsus and toes, 677.

LECT. 39.—Diseases of joints generally, 705; synovial inflammation, ib.; thickening of synovial membrane, 706; ulceration of cartilages, 707; scrofulous disease, 708; coxalgia, or morbus coxarius, 709.

LECT. 40.—Disease of the knee-joint, 737; anchylosis, 738; loose cartilages, 740; injuries of the head, 743; wounds of the scalp, ib.

LECT. 41.—Fracture of the cranium, 785; simple and compound fracture, ib.; counter-fracture, 686; separation of the

sutures, 787; wounds of the brain or its membranes, *ib.*; concussion of the brain, 788; compression of the brain, 791.

LECT. 42.—Inflammation of the brain, or encephalitis, 817; nature, *ib.*; symptoms, 818; treatment, 819; the operation of the trepan, 820; circumstances under which its employment is justifiable, 824.

LECT. 43.—Consequences of abscess of the liver, 849; encephalocele, or hernia of the brain, 850; treatment, 851; hernia of the cerebellum, 852; fungous tumours of the dura mater, *ib.*; causes, symptoms, 853; prognosis and treatment, 854; injuries and diseases of the spine, *ib.*; spina bifida, 855; treatment, 856; dislocations of the spine, 857; occipito-atloidal and atlido-axoidal articulations, *ib.*; treatment, 858.

LECT. 44.—Spontaneous dislocation of atlas and axis, 881; dislocation of the last five cervical vertebræ, 884; fracture of the spine, *ib.*; concussion, compression, and inflammation of cord, 887; caries of spine, 889.

LECT. 45.—Caries of the spine continued, 929; course, *ib.*; treatment, 930; curvature, its nature and symptoms, 931; causes, 935.

LECT. 46.—Curvature of the spine continued, 961; prognosis, *ib.*; treatment, 962.

Swallowing pins, singular case of, related by Mr. Birt, 532.

Syme v. Lizars, for libel, report of the trial, 281.

T.

Taliacotian operation, Mr. Slaggett's successful case of, 348.

Tapping, new instrument for, invented by Dr. Lendrick, 815.

Taylor, Dr. on the College of Physicians' degrees, 286; on a new species of biliary calculus, 383.

Teeth, various papers respecting the priority of discovery of the tubercular structure of the;—review of Mr. Owen's *Odontography*, 438; Mr. Owen's reply to the reviewer, 503; Mr. Nasmyth's reply to Mr. Owen, 545; Mr. Tomes's, 632; Mr. Owen's rejoinder, 637*; reply to Mr. Owen, by the reviewer of his work, 704*; by Mr. Tomes, 737*; note from Mr. Owen, declining any further controversy on the subject, 783.

— recent and fossil, Mr. Nasmyth on the structure of, 203.

Theory and practice, editorial article, 514.

Thomson, Dr. Robert Dundas, on the proofs of the presence of free muriatic acid in the stomach during digestion, 24.

Thomson, Mr. on the influence of woollen manufactures on health, 462.

———, Dr. Theophilus, case of aneurism supposed to have opened into the pericardium a considerable time before death, 517, 905.

———, Mr. Northon, treatise on blindness from cataract, reviewed, 664.

———, J. B. case of empyema with pneumo-thorax, 795.

Throat, Mr. Stafford's case of wound of the, 75.

——— Mr. Cheyne's case of fatal spasmodic affection of the, 258.

——— Mr. Fleming's observations on peculiar affections of the, arising from abscess between the pharynx and spine, 955, 985.

Thurnam, Mr. on a case of transposition of the viscera, accompanied by imperfect development of the spleen and uterus, 181; on aneurisms, 360.

Todd, Dr. of Brighton, notice of the death of, 848.

Tomes, Mr. on the structure of the teeth, in reply to Mr. Owen, 632.

Tubercle, Mr. Harrison on the connexion of, with a deficiency of the colouring matter of the blood, and on the exhibition of iron, 913.

Tumors, Mr. Shaw's two cases of, between the cerebellum and pons varolii, and compressing these parts, 362.

———, sero-cystic, removed from the breast, by Mr. T. B. Curling, with observations on the propriety of operating in states of prostration from extreme apprehension, 429.

Tumor, cartilaginous, Mr. Douglas's case of, 500.

———, Mr. Lever's case of, in the pelvis, impeding parturition, 600.

———, detached abdominal, Mr. Holt's case of, 692.

Turnbull, Dr. on the climate of Cuba, 48.

——— on Cuba honey and wax, 128.

Twins, case of, where one had been long dead, 45.

U.

University of London, examination questions:—In anatomy and physiology, 634; in chemistry, *ib.*; in materia medica and pharmacy, 635; in structural botany and vegetable physiology, *ib.* Examinations for honours: in anatomy and physiology, 670; in materia medica and pharmaceutical chemistry, *ib.*; in chemistry, *ib.*; list of candidates who obtained honours at the first examination for the degree of bachelor of medicine, 730.

Union surgeons, editorial article respecting, 396; editorial remarks on the treatment of, by the poor-law commissioners, 922.

Urine, Dr. J. C. Hall on the causes, symptoms, and treatment of suppression of, 176; cases of partial suppression, 177; of complete suppression, 178.

Uterus, gravid, Dr. Lee on the nerves of the, 41.

——— Mr. Arnott's case of large tumor of the, 120.

——— successful case of extirpation of, related by Mr. J. Bower Harrison, 151.

——— Dr. Jackson's case of rupture of the, 347.

——— Dr. Lee's pathological observations on diseases of the, reviewed, 356.

——— Mr. North on hydatids of the, 361.

——— Mr. Hurd on inversion of the, 836.

V.

Vaccination, Mr. Leese on the degree of reliance to be placed on the records of, 110.

Vaccination, Mr. Coles on, 625.

——— — Dr. Gregory on, 658.

——— extension bill, copy of resolutions respecting the, agreed to at a late meeting of the Medical Institution of Liverpool, 125; remarks on, by Mr. H. W. Rumsey, 193; proceedings respecting the, in the House of Commons, 527; editorial observations on the, 553; copy of the, 671.

Vaccine virus, Mr. Aikin on the renewal of the, 189.

Vagina, imperforate, singular case of, related by Mr. Mapleton, 548.

Variolæ vaccinae, Mr. Ceely's observations on the, 683, 715.

Veins, Dr. Langenbeck on the formation of cancer of the, and the possibility of communicating carcinoma from men to animals, 316.

Velpéau's, M. clinical lectures on erysipelas, 809, 827.

Veneral affections of the nose, Dr. Hannay on, 276.

Vienna, on the deficiency of clinical instruction at, 662.

Viper, Mr. H. K. Owen's case of bite by a, 337.

Viscera, Mr. Thurnam's case of transposi-

tion of the, accompanied by imperfect development of the spleen and uterus, 181.

Vision, single, with two eyes, Mr. Wharton Jones on, 73.

——— Mr. Dorrington's case of functional derangement of, 838.

Voltaic pile, Dr. Faraday on the source of power in the, 123.

W.

Walker, Mr. on indigenous medicines, 386.

Walne, Mr. on strabismus, 979.

Watson's, Dr. case of disorganizing inflammation of the valves of the heart, occurring in connexion with acute rheumatism, 77.

Westminster hospital report, 635.

Westminster hospital school, notice of its annexation to the hospital, 928.

Whitehead, Mr. of Manchester, the Cæsarean operation performed by, 897.

Wickham's, Mr. case of aneurism of the arteria innominata, in which the carotid and subclavian arteries were tied, 445.

Widows and orphans of medical men, annual dinner of the society for the relief of, 208, 233.

Williamson's, Dr. case of rupture of the intestinum ileum, 349.

Willshire's, Dr. principles of botany, reviewed, 628.

Wilson, Mr. Erasmus, two preparations exhibited by, at the meeting of the pathological department of the Royal Medical and Chirurgical Society, presenting a multilocular appearance of the descending colon, 119; case of tumor on the exterior of the thorax, 121; his anatomist's vade-mecum, reviewed, 303.

Wirsberg, Mr. Douglas on the nerve of, 228.

Woollen manufactures, Mr. Thomson on the influence of, on health, 462.

Working classes, editorial observations on the physical condition of the, 110.

Y.

Yate, Mr. on the treatment of croup, 907.



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